ENVIRONMENTAL ASSESSMENT

TO CHANGE THE IMPLEMENTATION SCHEDULE FOR SURVEY AND MANAGE AND PROTECTION BUFFER SPECIES

USDA Forest Service

and

USDI Bureau of Land Management

Forest Service National Forests in Regions 5 and 6 and Bureau of Land Management districts in California, Oregon, and Washington within the range of the northern spotted owl.

Proposed Implementation: December, 1998

RESPONSIBLE OFFICIALS:

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Date: October 7, 1998

United States Department of Agriculture	Forest Service	R-5 R-6	OR/WA CA	Bureau of Land Management	United States Department of Interior

Reply to: FS: 1920/2600(FS) Date: October 2, 1998
BLM: 1630/1736-PFP (931)

To: Our Reviewers

From: Greg Cox, Survey & Manage Leader, Forest Service
Bill Torgersen, Survey & Manage Leader, Bureau of Land Management

The Environmental Assessment (EA) "To Change the Implementation Schedule for Survey and Manage and Protection Buffer Species" is enclosed for your review and comment. The proposed action would delay implementation of survey requirements for 32 species identified in the Survey and Manage and Protection Buffer provisions of the Northwest Forest Plan (Record of Decision, pp. C4 through C6) for a period of one year. This proposed action would amend the forest plans for Forest Service national forests within the range of the northern spotted owl to reflect this schedule change. In addition, the proposed action would be accomplished through maintenance of BLM plans for districts within the range of the northern spotted owl to reflect the refinement of the implementation schedule for survey and manage and protection buffer species.

The Northwest Forest Plan amended Forest Service and Bureau of Land Management plans throughout the range of the northern spotted owl to require surveys for certain species prior to ground-disturbing actions taken after October 1, 1998. Those species were designated Component 2 species and Protection Buffer species. This is one of the Survey and Manage strategies in the Northwest Forest Plan (Record of Decision, pp. C4 through C6).

Based on current information that indicates the technical infeasibility of performing surveys for 32 of 80 species, the Forest Service and Bureau of Land Management will not be able to complete these surveys according to the schedule directed in the Northwest Forest Plan Record of Decision. This EA analyzes the proposal to postpone these surveys for one year.

A 30-day comment period will begin on October 7, 1998. Comments on the proposed action will be accepted until November 6, 1998. Comments postmarked by this date will be considered in the final decision.

Responsible Officials:

Ed Hastey, State Director, California
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Written comments may be submitted to:
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The EA and supporting documentation may be reviewed at Forest Service or Bureau of Land Management offices within the range of the northern spotted owl. The EA and supporting documentation can also be found on the Internet: **http://www.or.blm.gov/information.htm**

To request a copy of the EA and supporting documentation or for further information, please call: Cynthia Henchell or Kathleen Borovac at 503-808-2490.

Enclosure

ERRATA

We have noticed the following errors in the Environmental Assessment. Please change them accordingly.

1) On “Table 5: 32 of 80 Survey and Manage (S&M) and Protection Buffer (PB) Species Proposed for Schedule Change”, the Mollusk: *Monadenia churchi* (Church’s sideband) should be deleted. This species is not proposed for schedule change.

2) On “Appendix B- Summary of Species Evaluation by Taxa Specialists and Field Biologists and Botanists”, the Mollusk: *Monadenia churchi* (Church’s sideband) should be removed from the section “Not Technically Feasible to Survey/Not Substantially Increased Risk” and added to the section on the previous page “Technically Feasible to Survey/Not Substantially Increased Risk”.

3) Appendix C displays a header: “Pre-decisional DRAFT - October 1, 1998 (9:00 AM)-Pre-decisional DRAFT”. This header was used while the document was a working draft and was inadvertently not removed when the Environmental Assessment was released. Although it is still “predecisional”, this appendix is available for public review.

4) We have discovered some inconsistent formatting in Appendix C. A corrected version is available on the internet: http://www.or.blm.gov/nwfp.htm

5) There is a reference to the FONSI on page 18. The preliminary FONSI will not be mailed out with the EA but will be available upon request.

6) The National Park Service emblem was mistakenly placed on the front cover of the EA.

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TO CHANGE THE IMPLEMENTATION SCHEDULE
FOR SURVEY AND MANAGE AND PROTECTION BUFFER SPECIES

USDA Forest Service and USDI Bureau of Land Management

The Northwest Forest Plan (NFP) amended Forest Service and BLM plans throughout the range of the northern spotted owl to require surveys for certain species prior to ground-disturbing actions taken after October 1, 1998. Those species were designated Component 2 species and Protection Buffer species. This is one of the Survey and Manage strategies in the NFP (Northwest Forest Plan ROD C4-C6).

Surveys for 32 of those species cannot be done at this time because they are technically infeasible. The requirement in the plans to survey for these species prior to implementation of ground disturbing actions would result in the cessation of a major portion of forestry, recreational development, stream restoration and other projects of the land managing agencies. The impact of this mitigation measure on such activities under the NW Forest Plan SEIS and ROD was expected to be minor and insignificant. Certainly there was no expectation that it would result in such a major impact to resource programs. Details of these consequences for FY 1999 are described in this EA in the discussion of consequences of the No-Action alternative, Alternative 1.

The proposal is to amend these same Forest Service and BLM plans to postpone these surveys for one year. Scientific panels judged that this proposal was not likely to result in a substantial increase in risk to these 32 species. No threatened or endangered species, or species proposed for threatened or endangered status, will be affected (EA, Appendix F). Details of these consequences are presented in this EA as part of the discussion on Alternative 2, the Proposed Action.

The adverse effects of the proposal will be mitigated by beginning surveys for these 32 species during the year if technical feasibility problems can be solved. Monitoring as it now exists under the Northwest Forest Plan is sufficient to track the effects on these 32 species.

I. PURPOSE OF AND NEED FOR THE ACTION

The Northwest Forest Plan clearly anticipated that we would be able to accomplish surveys for these species within the existing schedule. The plan did not anticipate our inability to accomplish the program of work because of the technical infeasibility of surveying for these species. The survey feasibility analysis (EA. pg. 10) provided the basis for determining that we cannot survey for these species at this time. Response from field offices to a questionnaire (EA, Appendix D) provided further support for the conclusion that we cannot achieve the goals of the Northwest Forest Plan without a change in schedule.

The agencies are preparing an EA for this proposed schedule change to aid in the decision-making process of the Forest Service and BLM executives and the review by the Regional Interagency Executive Committee (RIEC). The ROD explicitly anticipated decisions on changing the schedule, moving a species from one survey strategy to another, or dropping mitigation requirements for a species and provided for the RIEC to make such changes (ROD, p. 37). The agencies are electing to use NEPA analysis for this proposed schedule change because the proposal would be the first change to Survey and Manage provisions which affects a large number of species and all administrative units in the region implementing the ROD.

A. Need for the Action

The Forest Service and BLM are responding to a need for continuation of the programs authorized and anticipated in their respective land management plans.

The proposed action will meet this need by allowing ground-disturbing actions in the next year without substantially increasing risks to the 32 Survey and Manage species. Not taking the proposed action (the No Action alternative) would postpone a major portion of ground-disturbing actions until surveys became technically feasible for these 32 species, which may never be possible for some of these species. Such a result would not meet the need expressed in the NW Forest Plan ROD "for a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies, and contribute valuable resources to the national economy on a predictable and long-term basis." (ROD p. 26) The expected level of forest products under the NW Forest Plan which was found to meet this need, cannot be met without a postponement of the survey requirement for these 32 Survey and Manage species.

Both agencies intend to manage the public lands for multiple uses. The NW Forest Plan itself responded to the twin needs of a healthy ecosystem while providing commodity uses of natural resources. Taking the proposed action would enable a continuation of timber harvest, prescribed burning, and other actions necessary to meet multiple-use objectives for our public lands.

B. Background

The NFP is a strategy for managing habitat for late-successional forest related species on Forest Service and BLM-administered lands within the range of the northern spotted owl. The NFP balances two primary purposes: (1) providing sustainable timber harvests, and (2) maintaining and restoring healthy old-growth ecosystems and adequate populations of fish, wildlife, and plants (ROD, pp., 2, 26, 61). The NFP includes land allocations and standards and guidelines that collectively establish broad-scale conservation strategies for individual species, species groups and communities, and ecosystems. The NFP also provides specific mitigation for some late-successional forest related species not listed under the Endangered Species Act (ESA) including species covered under the Survey and Manage and Protection Buffer standards and guidelines.

Species were identified as Survey and Manage species because little was known about their abundance, range, habitat, and ecology (see generally, FSEIS, Appendix J-2). Thus, discussion of impacts and risks to these species are inherently speculative. None of the species considered in this proposal for a change in schedule are listed or proposed for listing under ESA.

The decision in the ROD about the implementation schedule for these species was made based on admittedly limited information (ROD, p. 11; ROD, Appendix C, p. 5; and see generally, FSEIS, Appendix J2). In fact, the ROD decisionmakers found it necessary to change the implementation schedule between the FSEIS and the ROD:

> *These changes reflect the magnitude of the task, coupled with the lack of species information and skilled personnel.* (ROD, p. 37).

Despite considerable work since the ROD, the lack of species information, and the difficulty in identifying some species still limit the agencies' ability to successfully implement surveys for these species.

Species were assigned in the ROD to Survey and Manage Component 2 based in part on the assumptions that survey protocols existed or could be developed reasonably soon, and that adequate searches could be conducted in a single year (Draft Meeting Notes on Intent of Survey and Manage Strategies in the ROD, 12/2/94). As the agencies have gained more information about these species and have attempted to develop survey protocols, these assumptions have been called into question for some of the Survey and Manage Component 2 and Protection Buffer species, as discussed under "Feasibility of Surveys".

C. Status of Survey Protocol Development

The agencies have made substantial progress since the ROD in developing survey protocols and management recommendations, as well as building the necessary organizational infrastructure and biological databases to implement the Survey and Manage and Protection Buffer provisions (EA, Appendix A). The Regional Interagency Executive Committee (REIC) Interagency Advisory Committee (IAC) has chartered an Interagency Survey and Manage workgroup to develop databases, survey protocols, and management recommendations. The agencies have sorted through historical records of Survey and Manage species; have constructed a database of Survey and Manage known sites; and are near completion of the Interagency Species Management System (ISMS), designed to store Survey and Manage data in a central database available to field staff. The agencies have hired interagency technical experts to lead extensive and general regional surveys, as well as to provide training, species identification, and technical advice. The workgroup has succeeded in developing management recommendations for approximately 170 species for field implementation and review; management recommendations for an additional 100 species are currently in review or revision status. Survey protocols have proven more problematic, although progress has been made on survey protocols for most of the species. The work since the ROD has made it possible to survey for most of the Survey and Manage Component 2 and Protection Buffer species at this time. Training for most of these species have been provided and the field offices have been actively surveying for many of these species. Over 10,000 additional survey records have been reported and are being entered into a data base. However, the taxonomy and life history of some of these species makes surveys infeasible at this time.

D. Long-term strategy

In the next year, the agencies will make substantial progress in finalizing survey protocols and training personnel in field identification taxonomy and survey protocols for most species. However, the survey difficulties related to the species' taxonomy and life history are relatively intractable. In addition, for many of the Component 2 and Protection Buffer species there is very little known about the range, distribution, habitat, and abundance.

Therefore, under separate analysis and in addition to changing the survey schedule from FY 1999 to FY 2000, the agencies will need to consider other changes to the Survey and Manage and Protection Buffer provisions. These changes might include moving Survey and Manage Component 2 species to other components; removing some species from the Survey and Manage list; or adjusting of the structure of the Survey and Manage strategy. For example, it is possible that some of the FY 1999 species, especially some of the fungi, would be moved to Component 3 in the future: Component 3 was designed primarily for species whose characteristics make site and time-specific surveys difficult (ROD, Appendix C, pp. 5-6; Draft Meeting Notes on Intent

of Survey and Manage Strategies in the ROD, 12/2/94), which appears to be the case for most of the Survey and Manage and Protection Buffer fungi species.

The ROD explicitly anticipated that, as experience was gained in the implementation of this mitigation measure, the agencies would need to make changes in Survey and Manage provisions in the course of implementing the NFP, including changing the schedule, moving a species from one survey strategy to another, or dropping this mitigation requirement for any species whose status is determined to be more secure than originally projected. (ROD, p. 37). Such anticipated changes in the Survey and Manage provisions would generally not require additional NEPA analysis or plan amendment processes. However, other changes not anticipated in the ROD that would change the scope of resource uses or change the terms, conditions, and decisions in the Forest Service and BLM land and resource management plans would be made only after appropriate NEPA analysis and plan amendment processes.

A decision on the Proposed Action or alternatives analyzed in this EA would not prejudice a future decision on other changes to the Survey and Manage or Protection Buffer standards and guidelines.

II. AFFECTED ENVIRONMENT

The environment that would be affected by the Proposed Action and alternatives is far less than 1% of the 24.5 million acres covered by the Northwest Forest Plan. The environment that would be affected by the Proposed Action is that area that would be subject to ground-disturbing activities during Fiscal Year 1999. For the most part, these areas will be in the Matrix, Adaptive Management Areas, and younger stands within Riparian Reserves and Late-Successional Reserves.

The environment affected by the Northwest Forest Plan is described in the Final SEIS for the NFP (FSEIS, Chapters 3&4) and in the EISs for the Forest Service and BLM land use plans, listed in Appendix E in this document. Species-specific information on the habitat and range of Component 2 and Protection Buffer Species is presented in Appendix J-2 of the FSEIS.

III. MANAGEMENT DIRECTION

A. Northwest Forest Plan - Record of Decision (ROD)

The standards and guidelines for managing BLM and Forest Service administered lands within the range of the northern spotted owl are presented in Appendix C of the ROD.

Survey and Manage
There are four Survey and Manage strategies (variously called "survey strategies", "components," or "categories"):

> *The standards and guidelines require land managers to take certain actions relative to rare species of plants and animals, particularly amphibians, bryophytes, lichens, mollusks, vascular plants, fungi, and arthropods. These include: (1) manage known sites of rare organisms; (2) survey for the presence of rare organisms prior to ground-disturbing activities; (3) conduct surveys to identify locations and habitats of rare species; and (4) conduct general regional surveys for rare species.* (ROD, p. 11).

Protection Buffers
Separate from the Survey and Manage strategy, the ROD gives special and specific protection to species identified in the SAT report as Protection Buffers. Protection Buffer species appear in the Late Successional Reserve, Managed Late Successional Area, and Matrix sections of the standards and guidelines (ROD, Appendix C, pp. 9, 19-21, 23, 26-28, 45-48). Application of the Protection Buffer provisions results in the addition of unmapped Late-Successional Reserves and Managed Late-Successional Areas to be managed according to species-specific standards and guidelines (ROD, Appendix C, pp. 11, 26). Although the Protection Buffer provisions and the Survey and Manage strategy have different histories and implementation mechanisms, the division between these provisions is not so distinct, and the reason for maintaining a separate strategy for protection is not clear. For instance, 13 of the 17 Protection Buffer species are also included as Survey and Manage species (ROD, Appendix C, pp. 49-61). Also, some of Protection Buffer species (i.e., amphibians, mosses, liverworts, and fungi) share a common implementation schedule with Survey and Manage species.

Implementation Schedule
The schedule for conducting surveys for Component 2 Survey & Manage and Protection Buffer species is detailed in the ROD. Surveys are required prior to ground-disturbing activities that will be implemented in Fiscal Year 1999 and later for 80 Survey and Manage Component 2 species and Protection Buffer species.

> *Survey protocols will be developed and implemented for the 71 remaining species under survey strategy 2 listed on pp. C-49 through 61 as soon as possible. In all cases, these surveys must be completed prior to ground disturbing activities that will be authorized or implemented in FY 1999 or later. This will provide agencies a maximum of four full fiscal years (FYs 1995, 1996, 1997, and 1998) in which to develop and apply survey protocols for these species. Agencies are to begin implementation of this requirement with available*

resources in FY 1994. Work to establish habitat requirements and survey protocols may be prioritized relative to the estimated threats to the species. (ROD, p. 37).

The ROD explicitly anticipated that the agencies may have to change Survey and Manage provisions in the course of implementing the NFP:

> *As experience is acquired with these requirements, agencies may propose changes to the REO for analysis.* ***These changes could include changing the schedule,*** *moving a species from one survey strategy to another, or dropping this mitigation requirement for any species whose status is determined to be more secure than originally projected. The REO will forward such proposals, along with recommendations, to the RIEC for action. The RIEC may recommend such changes as appropriate in order to assure the continuing attainment of the purposes of the plan and the conservation requirements of all laws applicable to the affected species.* (ROD, p. 37, emphasis added).

The Northwest Forest Plan provides direction to national forests and BLM districts within the range of the northern spotted owl. National forest plans covered by the NFP were amended to reflect its direction. Similarly, BLM district plans were adopted subsequent to the issuance of the NFP Record of Decision (ROD) and incorporated all NFP direction.

B. Agency Approaches

The Forest Service and BLM would implement the Proposed Action by means of different administrative procedures.

Forest Service Approach:
The Forest Service would implement a change in survey schedule as a non-significant plan amendment of the existing forest plans listed in Appendix E of this document. The change in survey schedule would not be a significant plan amendment as defined by the National Forest Management Act for the following reasons: (1) it would apply for a limited time; (2) it would result in only a minor refinement of the standards and guidelines; (3) it would not alter the goals and objectives in the existing forest plans; and (4) it would not alter the goods and services projected by existing forest plans.

BLM Approach:
The BLM would implement a change in survey schedule as plan maintenance of the existing plans listed in Appendix E of this document. The change in survey schedule would refine the previously approved decision based on a minor

change in data. 43 CFR 1610.5-4. None of the changes in survey schedule considered in the Proposed Action and the other action alternative would result in a change in the scope of resource uses or a change in the terms, conditions, and decisions of the existing RMPs, and therefore a plan amendment is not required. 43 CFR 1610.5-5.

Changing the survey schedule from FY 1999 to FY 2000 would not remove all of the difficulties in surveying for the 32 species for which surveys are not technically feasible at this time and for which there is not anticipated to be a substantially increased risk. In the next year, the agencies expect to make progress in finalizing survey protocols and training personnel in field identification, taxonomy and survey protocols. Additional work is expected to be accomplished to clarify species taxonomy which may allow field survey identification of some species. Even so, there may be a need to move some species to more appropriate survey categories. This will be analyzed under a separate environmental document with a goal to complete this analysis and issue a decision by October 1, 1999.

IV. ISSUES

A. Risk to Species

Survey and Manage taxa specialists, field biologists and botanists also evaluated whether, based on their professional judgement and general perceptions of the FY 1999 program of work, changing the survey schedule from FY 1999 to FY 2000 would substantially increase the risk to the long-term viability of each FY 1999 species (see FEMAT, Chapter IV, pp. 39-44; FSEIS, Appendix J2, pp. 2-3 for discussions of species viability).

There are several factors which serve to reduce the risk (see Table 5, EA) to all of the Component 2 and Protection Buffer species, as will be discussed more fully below in the section on the Affected Environment and Environmental Consequences. These factors include the substantial habitat provided in additional reserve land use allocations in the ROD after the analysis of species risk by the viability panels for the FEMAT Report and FSEIS; the reduction of timber harvest levels below those analyzed in the FSEIS; and the small percentage of the Northwest Forest Plan area that would be affected by projects in FY 1999; as well as continued management of those species which are also Component 1 species.

Table 1. Feasibility of Surveys and Increment of Risk of Changing the Survey Schedule for 80 Survey and Manage Component 2 and Protection Buffer Species

		Survey Feasibility	
		technically feasible	*not technically feasible*
Increment of Risk to Species	*substantially increased*	12	0
	not substantially increased	36	32

B. - Feasibility of Surveys

On April 20, 1998, 17 Survey and Manage taxa specialists, field biologists and botanists from the Forest Service (PNW, R-5, and R-6), BLM, and the U.S. Fish and Wildlife Service met in the Regional Ecosystem Office (REO) in Portland. They evaluated the 80 Component 2 and Protection Buffer species that have the requirement for survey prior to ground-disturbing activities implemented in FY 1999. They focused on the feasibility of surveying for the species in the next year, and on whether changing the survey schedule for one year would likely result in a substantial increase of risk. Members of the interagency Survey and Manage Core Team reviewed and summarized the species-by-species reports (EA, Appendices B and C).

This evaluation identified the following problems with surveys: the limited number of experts able to identify some species; the inability to identify some species in the field; and the inability to locate some species in a single year of surveys. The evaluation is summarized below and in Table 5, page 23.

- Some of the FY 1999 species can only be authoritatively identified by one or a very limited number of experts. These experts cannot personally visit all FY 1999 projects to conduct adequate surveys all. These experts must train agency field personnel are not sufficiently trained and experienced to reliably identify 26 of the 80 FY 1999 species, including most of the freshwater snails. Further training of agency specialists in both species taxonomy and the specific requirements of the survey protocols is needed before surveys can be completed for all ground-disturbing activities.

- For many of the FY 1999 species, the necessary characteristics to identify the species cannot be distinguished in the field. Species that could not be generally identified in the field and required more than simple laboratory confirmation for identification were considered infeasible to identify in the field. At this time, there is not a taxonomic description available for field identification of 20 of the 80 FY 1999 species in the field, including most of the freshwater snails, two liverworts, and two fungi. Therefore, surveys could at least require collection in the field with a complete record of collection locations; extensive laboratory work for identification; and a return to the field to mark known sites based on laboratory identification. Implementing such detailed survey protocols would be operationally prohibitive on a site-specific basis for all ground-disturbing activities.

- Finally, adequate searches for many FY 1999 species cannot be conducted in a single year because there is only a short time period when the critical identifying characteristics are visible, or the species does not produce the identifying structures annually or predictably. For 9 of the 80 FY 1999 species, the species' life history is such that surveys require several or many years to complete. Most of these species are fungi that do not annually or reliably produce fruiting bodies. Attempting to survey for such species in a single year is not likely to find known sites or to yield technically credible results. These species fit more consistently in Component 3 (NFP ROD, p. 37) and we expect to consider moving these species in the long term strategy (see D. Long Term Strategy, p. 4).

As a result of the above difficulties, surveys are not technically feasible at this time for 32 of the 80 species evaluated.[1] (See also Table 1, page 9.)

The results of this initial evaluation were provided to BLM and Forest Service field specialists for an additional iteration of the evaluation to ensure that the results reflected the most current information available. Based on the responses from field specialists, the Survey and Manage Core Team members made some minor modifications to the species evaluations. In some cases, field specialists were not

[1] Note that this definition focuses on technical feasibility of surveying for the species is based on what is known at a regional level. It does not address the operational feasibility for field units to conduct surveys or the workload of any particular field office. It does not address the rarity or the abundance of the species. Although it is technically infeasible to conduct specific surveys for these 32 species, some of these species may occasionally be encountered and identified. For example, while surveying for other species, a fungus requiring certain site conditions to fruit may be visible and identified or a mollusk collected while searching for mollusks which are technically feasible could be later identified by a specialist as one of the technically infeasible species.

unanimous in their responses. Several changes were made based on field specialist input, primarily among technical feasibility categories. For example, some field specialists reported that they were able to identify species that were initially determined to be technically infeasible to survey because the species can be authoritatively identified only by few experts. In such cases where the responses demonstrated that surveys are generally feasible within the range of the species, the Survey and Manage Core Team members modified the initial evaluation. The initial results, field responses, and any modifications are summarized in Appendix C (EA).

C. Risk to Other Resources

The two primary goals of the Northwest Forest Plan are (1) to provide goods and services, including timber, and (2) maintain and restore healthy old-growth ecosystems and habitat to support adequate populations of fish, wildlife, and plants (ROD, pp. 2, 26, 61). The Proposed Action (Alternative 2) was designed to satisfy both of those goals to at least some degree. Without conducting required surveys, a significant part of the timber program, as well as the output of other goods and services that are a result of ground-disturbing activities will not take place. A delay in the implementation of survey requirements for Fiscal Year 1999 will permit a continuation of much of the timber sale program. The evaluation of alternatives will compare the estimated volume of timber available for offer during Fiscal Year 1999 under each of the alternatives.

V. PROPOSED ACTION AND ALTERNATIVES

A. Alternatives Analyzed in Detail

No Action (Alternative 1) — no change to the Survey and Manage provisions, with no ground-disturbing activities to be implemented in FY 1999 within the habitat and range of the species, without a completed survey for all Component 2 Survey and Manage species.

The Proposed Action (Alternative 2) - is to change the survey schedule for 32 of the FY 1999 species listed in Appendix B (EA), based on the technical feasibility of surveys and the estimated increment of risk to the species. Specifically, the survey schedule would be changed from FY 1999 to FY 2000. For the remaining 48 species, surveys would remain unchanged.

B. Alternatives Considered, But Not Analyzed in Detail

The agencies considered an alternative that would change the survey schedule from FY 1999 to FY 2000 for all 80 FY 1999 species. This alternative would keep together the species for which the ROD established a common survey schedule and would eliminate disruptions to planned FY 1999 activities due to surveys. However, for 12 of

the species, changing the survey schedule could substantially increase the risk to the species. Failure to protect populations of these species which might have been found by surveying prior to ground-disturbing activities in FY 1999 projects could reduce future management opportunities for these species. Although unlikely given the limited number of management projects that would occur in one year, such activities could inadvertently foreclose a future opportunity to protect sufficient populations of the species. There also was concern that this alternative could limit the choice of reasonable alternatives when the agency considers other, long-term changes to the Survey and Manage strategy, which are discussed below under "Affected Environment and Environmental Consequences." Therefore, this alternative was dropped from further analysis.

VI. ENVIRONMENTAL CONSEQUENCES

A. Alternative 1 — No Action

If no change is made in the Survey and Manage provisions, surveys for the FY 1999 species must be completed prior to all ground-disturbing activities that will be implemented in FY 1999. This alternative would not meet the goals of the Northwest Forest Plan because it would not allow ground-disturbing projects to go forward on lands within the range and habitat of the 32 Survey and Manage species due to the technical infeasibility of surveying for these species at this time. Attempting to survey for many of these species despite the difficulties discussed in "Issues" (Section 4-B), would consume a great deal of the time and energy of field personnel and the few taxonomic experts. This expenditure of effort would detract from gaining habitat and life history information on these and other Survey and Manage species, and reduce the time available for the taxonomic experts to design management protocols to ensure the maintenance of habitat for these species over the long term.

Effects on Survey and Manage and Protection Buffer Species

If the survey schedule is not changed, projects planned within the range and habitat of the 32 species for which surveys are not technically feasible would not occur because of the inability to complete surveys. Projects outside of the range and habitat of the 32 species would occur and would have effects on other Survey and Manage and Protection Buffer species as disclosed in the FSEIS (Chapter 4, pp. 113-185). There is the unquantifiable potential for adverse effects on habitat resulting from restoration projects not being initiated because survey projects could not be completed.

Effects on Other Resources

Based on initial estimates by field managers in the Forest Service and BLM, the inability to complete surveys would prevent the implementation of approximately half of planned

timber harvests, most prescribed burning, and an indeterminate number of various other ground disturbing activities in the next year.

Table 2. Estimated impact on programs No Action alternative. Reduction from planned outputs.

- Volume of timber offered for sale (BLM) 30 mmbf (85% reduction)
- Volume of timber offered for sale (FS) 310 mmbf (56% reduction)
- Acres in prescribed fire (BLM) 10,500 acres (37% reduction)
- Acres in prescribed fire (FS) 12,578 acres (73% reduction)

Estimation of these effects is difficult to exactly quantify at this time. It is not certain in all administrative units which projects would require surveys, in part because of incomplete descriptions of species' range and habitat. Under the No Action alternative the majority of timber sales scheduled for harvest in FY 1999 would not go forward because they could not meet the Survey and Manage standard. The timber sale volume and acres receiving prescribed fire would be considerably lower than planned. In the short term, the effects of the No Action alternative would disrupt the ability of the agencies to provide for a sustainable supply of timber and forest products, which is one of the goals of the Northwest Forest Plan (ROD, pp 25-26). The No Action alternative would allow a less predictable and even supply of timber from federal lands in the short term. We would expect that many projects delayed under the No Action alternative would most likely be implemented sometime in the future once relevant surveys are technically feasible or are no longer required prior to ground disturbing activities. Irrespective of this decision, the evaluation of potential changes in Survey and Manage and Protection Buffer provisions will take place during FY 1999 under separate analysis.

In the long term, there may be some planned projects that would be changed if they cannot occur in the next year. Projects might be canceled if they cannot occur in the next year. Examples of such projects might include salvage of timber in cases where the value of the timber will be lost if salvage is delayed, or prescribed burning in cases where fuel conditions would become unmanageable. It is possible that foregoing some prescribed burning could result in wildfires that might have been avoided under the Proposed Action or the other action alternative. However, the cancellation or alteration of future projects as a result of such a delay is speculative, and the long term effects of such cancellation or alteration cannot be reasonably ascertained at this time. Any such projects would be analyzed in future, site-specific NEPA analysis.

Effects On Threatened, Endangered, and Proposed Species and Designated and Proposed Critical Habitat.

The No Action alternative would result in no change in survey schedules for Survey and Manage species. Consequently, there would be no effects to listed or proposed species or designated or proposed critical habitats (EA, Appendix F) resulting from a decision to select this alternative.

B. Alternative 2 - (Proposed Action) - change the schedule for 32 species for which surveys are technically infeasible and there is not a substantially increased risk

The purpose of this proposed change is to develop a schedule that will:

- allow the implementation of effective and technically credible surveys;
- change the survey schedule only on those 32 species where risks were not estimated to be substantial based on a delay of one year; and
- avoid substantial disruption of other resource programs and thus carry out the intent of the Northwest Forest Plan.

Changing the survey schedule to FY 2000 for 32 species would remove the requirement to survey for these species prior to FY 1999 ground-disturbing activities, which would reduce disruptions to planned FY 1999 activities. Under this alternative, the schedule for surveys would be changed only for species for which surveys are not technically feasible at this time and for which there is not an anticipated substantially increased risk to species' viability during this year.

Effects on Survey and Manage and Protection Buffer Species

Changing the survey schedule for 32 species could allow some loss of individuals and localized populations that would otherwise be protected. The presence or absence of the species would not be determined because the surveys can not be conducted. However, based on the evaluation by the taxa specialists and field biologists and botanists, this change in schedule is not anticipated to substantially increase the risk to these species beyond what had been anticipated in the SEIS for the NFP (See Table 5, page 23), and is unlikely to result in a loss of populations that would foreclose future management opportunities, such as moving the species to another Survey and Manage component.

In addition to the species-specific evaluation of risk presented in Appendix C of this document, there are several factors which serve to reduce the risk to all of the Component 2 and Protection Buffer species. One important factor is the substantial habitat provided by Riparian Reserves, Late-Successional Reserves, Managed Late-Successional Reserves, and Congressionally and Administratively Withdrawn Areas, and other reserved areas. These reserve areas comprise more than 78% of the federal lands in the Northwest Forest Plan areas. In these areas, only management activities consistent with the reserve goals will occur, and thus the areas are expected to

continue providing habitat for Component 2 and Protection Buffer species. To a great degree, the presumed suitable habitat requirements for many of these species is contained within these reserve areas.

Table 3. Summary of rationale for minimal risk determination for 32 species (from Appendix C).

Rationale for Minimal Risk Determination	No. Of Species
Wide range/distribution	7
Protected by Riparian Reserves	20
Protected by LSRs	2
Protected by Marbled Murrelet mitigation	3

A second important factor is that the degree of impact to these species predicted by the Northwest Forest Plan for the four year period prior to the completion and implementation of survey protocols was based on an anticipated level of timber harvest that was higher than has been actually harvested. The agencies have harvested less timber, and therefore disturbed lass acreage than in the in the past four years than was predicted in the FSEIS. Under the NFP, federal (FS/BLM) timber sale offerings for the period of FY95 through FY98 was expected to be 3.62 billion board feet. In actuality, only an estimated 3.23 billion board feet was offered for sale. Since the agencies have implemented fewer projects prior to the requirement for pre-project surveys for Component 2 and Protection Buffer species, it is reasonable to conclude that timber harvest has had less impact than anticipated on the Component 2 and Protection Buffer species over this period of time.

The expected risk to these species is also considered to be insubstantial because the projects that would be implemented over the next year will affect only a very small portion of the land within the planning area. For example, if the agencies were to harvest the amount of timber anticipated in the FSEIS, timber sales would affect approximately 1% of the Matrix area under the Northwest Forest Plan. (Note that this is more than has been harvested in each of the past four years, as discussed above). The Matrix represents only 16% of the federal land in the Northwest Forest Plan area. Therefore, timber sales in FY 1999 would, at most, affect 0.16% of the federal land in the Northwest Forest Plan area. Given that most of the ground disturbing activity would be taking place outside the reserves which were designed to protect the presumed suitable habitat for the great majority of these species, the chance that this expected

level and location of ground disturbing activity would even occur on a site used by any of these species is extremely small, presuming that they are as rare and habitat sensitive as assumed in the Forest Plan.

Effects on Other Resources
The Proposed Action would allow some resource management projects to continue that would not occur if all ground-disturbing projects are halted in FY 1999. Projects that occur outside of the range or habitat of the 32 species would not be affected by the Proposed Action. However, the Proposed Action would affect all ground-disturbing projects that do require surveys for the 32 species, including timber sales, prescribed burning, stream restoration, and construction and repair of recreation facilities. The immediate effect of the Proposed Action would be to allow such projects to go forward during the next year. The estimated volume offered for sale by the BLM and Forest Service within the range of the northern spotted owl under the this alternative would be 740 million board feet. This compares to an estimated offering of 340 million board feet if no change is made to the survey schedule.

The Proposed Action would help the agencies consistently provide a sustainable supply of timber and other forest products, which is one of the goals of the Northwest Forest Plan (ROD, pp. 25-26), in both the short term and long term. The Proposed Action would allow for a more predictable and even supply of timber from federal lands in the short term. The effect of timber supply on local, state, national, and international economies is analyzed in the FSEIS (Chapters 3&4, pp. 263-274, 288-314) and the EISs for the land use plans listed in Appendix E (EA). Additionally, the Proposed Action would help the agencies provide recreation opportunities by implementing construction and repair projects that would be delayed under the No Action alternative.

Table 4. Estimated effect on programs under Proposed Action . Reduction from planned outputs.

- timber volume offered for sale (BLM) 175 mmbf (18% reduction)
- timber volume offered for sale (FS) 560 mmbf (19% reduction)
- Acres in prescribed fire (BLM) 16,200 acres (3% reduction)
- Acres in prescribed fire (FS) 19,000 acres (60% reduction)

Effects On Threatened, Endangered, and Proposed Species and Designated and Proposed Critical Habitat.
The Biological Opinion prepared for the ROD assumed that all the features and standards and guidelines for the NFP would be implemented (NFP FSEIS Appendix G, Vol 2). The Survey and Manage component was one such feature. A one year deferment of implementation of surveys for 32 Survey and Manage (S&M) species represents a change in the assumption. Given that there is a different assumption it is

necessary to examine the magnitude of the change and its effect to listed and proposed species and designated critical habitat. The results of this examination are detailed in Appendix F (EA). There would be no effects to listed or proposed species or designated or proposed critical habitats resulting from a decision to select this alternative.

VII. MONITORING

The monitoring strategy for the proposed action is to tier to the existing monitoring \plans and strategy in the Northwest Forest Plan, and individual National Forests and BLM Districts. Monitoring is based on key issues and key environmental effects analysis discussed in NEPA analysis. The issues and environmental analysis addressed in this EA will be adequately monitored under the overall strategy set forth in Section E of Attachment A of the NFP ROD and the ongoing regional, national forest, and BLM district monitoring programs. No specific additional monitoring is necessary because existing monitoring under the Northwest Forest Plan is designed to address short term implementation issues, and long term effectiveness and validation issues. Species-specific monitoring is not practicable for the 32 species addressed in the Proposed Action because of limited information. In general the monitoring strategy set forth in the Northwest Forest Plan to address these types of species (rare species) is to take a habitat approach (NFP ROD pg E-11). The current strategy associated with these species will help to fulfill the monitoring goals identified on page E-11 of the NFP ROD of: "**Increasing future possibilities of discovering new locations,* and **Track their status and trends over time".*

VIII. CONSULTATION AND COORDINATION

A. Public Participation

The general proposal to change the survey schedule was presented by the Regional Ecosystem Office (REO) to the Intergovernmental Advisory Committee (IAC) for review and discussion on May 7, 1998.[2] That meeting included a presentation by a representative of the Oregon Natural Resources Council, commenting on implementation of the Survey and Manage strategy. Members of the IAC were encouraged to provide the REO with comments on the general proposal by a REO Memorandum date August 21, 1996. One comment was received which requested

[2] The IAC is an intergovernmental advisory committee, chartered pursuant to the Federal Advisory Committee Act. Its members include representatives from 11 federal agencies along with 9 non-federal members including: Governor's representatives; representatives from Associations of Counties; and three tribal representatives. The purpose of the Advisory Committee is to advise the RIEC on intergovernmental coordination regarding the implementation of the ROD. The IAC provides advice and recommendations to provide better integration of forest management activities among Federal and non-Federal governmental entities to ensure that such activities are complementary.

more information on survey feasibility, how risk to the species were determined, and what actions could proceed for species with poorly known habitat and ranges.

To help establish the scope of this environmental analysis, the agencies mailed a letter the week of September 21, 1998, to the individuals and groups listed on the planning mailing lists for each of the administrative units within the area of the Northwest Forest Plan. That letter informed the public that the agencies are considering this schedule change and asked the public for issues or concerns related to the Proposed Action. In that letter, the agencies also invited the public to request a copy of this environmental analysis.

The agencies will mail this EA along with a preliminary Finding of No Significant Impact (FONSI) to a list of individuals and organizations compiled from FS forests and BLM district offices mailing lists within the range of the Northern Spotted Owl. These documents and the full text of the appendices will also be available on the Internet at: http://www.or.blm.gov/information.htm

The EA and preliminary FONSI will be available for public comment for thirty days. Public comments will be addressed before a decision is made on this action. Depending on the number and nature of the comments, the agencies may respond to the comments by separate letter, or may summarize and address the comments in a future environmental analysis or decision document on this action.

B. Changes to EA as a result of scoping

A scoping letter was mailed to the public on September 22, 1998. The number of species for which surveys are considered infeasible was listed as 33 in this letter. As a result of internal scoping, one of the 33 species was dropped from discussion in the EA. Species experts judge *Monadenia churchii* to be limited in range and habitat but consider surveys for this species as feasible and recommend that they be conducted along with the other 47 Component 2 species listed on Table C-3 of the ROD Standards and Guidelines which were not being proposed for change.

C. Agencies, Groups and Individuals Consulted

This Proposed Action and alternatives were originally evaluated by the REO[3] and recommended to the Regional Interagency Executive Committee (RIEC). The RIEC

[3] The REO provides staff work and support to facilitate RIEC decision making and prompt interagency issue resolution in support of implementation of the Northwest Forest Plan. The REO is also responsible for evaluation of major modifications arising from the adaptive management process. The REO makes recommendations to the RIEC, who has decision making responsibility. (ROD, Appendix E, p. 16).

discussed this Proposed Action and alternatives in meetings on April 7, June 9, and July 7, 1998.[4] The Interagency Steering Committee (ISC) considered this Proposed Action and alternatives in an ISC meeting on August 12, 1998.[5] Based on these discussions, the RIEC elected to proceed with environmental analysis of the Proposed Action and alternatives.

ESA Consultation

Based on analysis by Forest Service and BLM biologists, the Proposed Action would not modify the Northwest Forest Plan or the land use plans listed in Appendix E (EA) in a manner that would cause an effect to the listed species or critical habitat (Appendix F, EA) that was not considered in the biological opinions on those plans. Furthermore, there is no new information related to the Proposed Action that reveals effects of the Northwest Forest Plan and the land use plans listed in Appendix E (EA) that may affect listed species or critical habitat in a manner or to an extent not previously considered. Therefore, re-initiation of the consultation on the Northwest Forest Plan and the land use plans listed in Appendix E (EA) is not required. In addition, we have determined that there will be no effect to federally listed species or designated and proposed critical habitats from either of the alternatives.

D. List of Preparers

This EA was prepared by:

Richard Hardt	Forest Ecologist, Eugene District, BLM
Arnold Holden	Deputy Director, Strategic Planning Staff, Pacific Northwest Region, Forest Service
Judy Nelson	Chief of Biological Resources, Oregon/Washington State Office, BLM
Cindy Henchell	Environmental Coordinator, Forest Service, Gifford Pinchot National Forest
Kathleen Borovac	Forester, BLM, Medford District

[4] The RIEC serves asthe senior regional entity to assure implementation of the Northwest Forest Plan. The RIEC consists of Pacific Northwest federal agency heads of the Forest Service, Bureau of Land Management, FishandWildlife Service, National Marine Fisheries Service, Bureau of Indian Affairs, Environmental Protection Agency, National Park Service; Geological Survey, Biological Resources Division, Environmental Protection Agency-Research Division, and Forest Service-Pacific Northwest Research Station.

[5] The ISC establishes overall policies governing the implementation ofthe Northwest Forest Plan and addresses and resolves issues referred to it by the RIEC. The ISC consists of representatives from the offices of the Secretary of the Interior, Secretary of Agriculture, Administrator of the Environmental Protection Agency, Under Secretary of Commerce for Oceans and Atmosphere, and is directed by the Chair of the White House Council on Environmental Quality or the Chair's designee. (ROD, Appendix E, pp. 15-16).

This EA was developed from analysis provided by the following taxa specialists, field biologists and botanists, and Survey and Manage Core Group and REO members:

Mollusks

Joseph Furnish	Wildlife Biologist, USFS, Region 5
Roger Monthey	Wildlife Biologist, BLM, Salem District
Paul Jeske	Natural Resource Specialist, BLM Salem District
Tom Burke	Wildlife Biologist, USFS, Wenatchee NF
Dave Kennedy	Wildlife Biologist, USFS, Mt. Hood NF

Bryophytes

Nancy Fredricks	Botanist, USFS, Gifford Pinchot NF
Robin Lesher	Ecologist, USFS, Mt. Baker-Snoqualmie NF
Judy Harpel	Regional Bryologist-Lichenologist, USFS, Gifford Pinchot NF
John Davis	Fish and Wildlife Biologist, US FWS, Oregon State Office

Lichens

Linda Geiser	Botanist, USFS, Siuslaw NF
Chiska Derr	Botanist, USFS, Mt. St. Helens National Monument

Fungi

Thomas O'Dell	Regional Mycologist, USFS, Pacific Northwest Research Station, Corvallis

Vascular Plants

Nancy Wogen	Ecologist, BLM, Eugene District
Joan Seevers	Botanist, BLM, Medford District
Lisa Hoover	Botanist, USFS, Six Rivers NF
Laura Potash	Botanist, USFS, Mt. Baker-Snoqualmie NF
Sally Claggett	Botanist, USFS, Gifford Pinchot NF

Core Group Members conducting Supplemental Analysis

Robin Bown	Wildlife Biologist, US FWS, Oregon State Office
Sarah Madsen	Wildlife Biologist, USFS, Region 6
Cheryl McCaffrey	Botanist, BLM, Oregon State Office
Jay Watson	Environmental Specialist, Regional Ecosystem Office (US FWS)

IX. REFERENCES

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USDA Forest Service, et al. July 1993. Forest Ecosystem Management: an ecological, economic, and social assessment [FEMAT]. Washington, D.C.: U.S. Government Printing Office.

USDA Forest Service and USDI Bureau of Land Management. February 1994. Final Supplemental Environmental Impact Statement (FSEIS) on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl.

USDA Forest Service and USDI Bureau of Land Management. April 1994. Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl.

Table 5: 32 of 80 Survey and Manage (S&M) and Protection Buffer (PB) Species Proposed for Schedule Change

Scientific Name	(Common Name)	Taxon	S&M/PB	Reason for Schedule Change		
				Irregular Fruiting*	Short Fruiting Period**	Difficult to Identify
Aleuria rhenana		Fungu	PB	x		
Bondarzewia montana		Fungus	S&M	x		
Otidea leporina		Fungus	PB	x		
Otidea onotica		Fungus	PB	x		
Otidea smithii		Fungus	PB	x		
Polyozellus multiplex		Fungus	PB	x		
Sarcosoma mexicana		Fungus	PB	x		
Brotherella roellii		Bryophyte	PB			x
Buxbaumia viridis		Bryophyte	PB		x	
Diplophyllum plicatum		Bryophyte	S&M			x
Kurzia makinoana		Bryophyte	S&M			x
Marsupella emarginata var. aquatica		Bryophyte	S&M			x
Rhizomnium nudum		Bryophyte	PB			x
Tetraphis geniculata		Bryophyte	PB		x	
Fluminicola n. sp. 1	(Klamath pebblesnail)	Mollusk	S&M			x
Fluminicola n. sp. 2	(tall pebblesnail)	Mollusk	S&M			x
Fluminicola n. sp. 3	(Klamath rim pebblesnail)	Mollusk	S&M			x
Fluminicola n. sp. 11	(Fredenburg pebblesnail)	Mollusk	S&M			x
Fluminicola n. sp. 14	(potem pebblesnail)	Mollusk	S&M			x
Fluminicola n. sp. 15	(flat-top pebblesnail)	Mollusk	S&M			x
Fluminicola n. sp. 16	(Shasta pebblesnail)	Mollusk	S&M			x
Fluminicola n. sp. 17	(disjunct pebblesnail)	Mollusk	S&M			x
Fluminicola n. sp. 18	(globular pebblesnail)	Mollusk	S&M			x
Fluminicola n. sp. 19	(umbilicate pebblesnail)	Mollusk	S&M			x
Fluminicola n. sp. 20	(Lost Creek pebblesnail)	Mollusk	S&M			x
Juga (Orebasis) n. sp. 2	(basalt juga)	Mollusk	S&M			x
Juga (Orebasis) n. sp. 3	(cinnamon juga)	Mollusk	S&M			x
Lyogyrus n. sp. 1	(Columbia duskysnail)	Mollusk	S&M			x

Lyogyrus n. sp. 3	(canary duskysnail)	Mollusk	S&M			x
Vespericola pressleyi	(Pressley heperian)	Mollusk	S&M			x
Vespericola shasta	(Shasta hespian)	Mollusk	S&M			x
Vorticifex n. sp. 1	(knobby rams-horn)	Mollusk	S&M			x

Note: * species only identified through fruiting; fruiting depends on local weather conditions and may not occur annually
** fruiting characteristics needed for identification visible for very short time periods (e.g. two weeks)

APPENDICES

FOR

ENVIRONMENTAL ASSESSMENT

TO CHANGE THE IMPLEMENTATION SCHEDULE FOR SURVEY AND MANAGE AND PROTECTION BUFFER SPECIES

APPENDIX A — Survey and Manage Accomplishments

In November 1994 the RIEC chartered an Interagency Survey and Manage workgroup which still operates under the purview of the REO. An Intermediate Management Group with BLM, FS, FWS, and PNW regional level management representatives guides the workgroup. The main purpose of this workgroup is to develop the database on species locations, and to prepare management recommendations for component 1 and 2 species, survey protocols for component 2 species, and procedures for addressing components 3 and 4. The Protection Buffer species were added to the purview of this workgroup as the information needs were similar. The workgroup consists of approximately 50 agency experts and program managers in the various taxonomic groups. Three subgroups are addressing components 3 and 4 with more of a research approach to these more long-term and broad scale surveys.

Data on locations of all component 1 S&M species was collected widely during 1994-1995. Data from BLM, USFS, and NPS agency files was collected and several experts were contracted to collect information from herbaria, museums, and private collections across the country which were thought to have the major holdings of northwest species. Nearly 8000 records of variable quality and precision were collected. Approximately 000 records contained accurate location information and were therefore locatable sufficiently for project planning. A database containing this information was developed and sent to BLM and USFS field units for use in project planning and in management of these known sites if located in proposed project areas.

The data received varied considerably in quality from vague descriptions specific to mountains, trails, rivers, or even just name of the state; to legal descriptions broken into smaller units, though not usually finer than the 1/4 1/4 section (1/4 mile); to accurately located sites indicated by crossings or maps. As a main purpose of component 1 is to use the "known site" information to design or modify activities, the locational information needed to be known precisely enough to do this. The ROD (at page C-4) also suggested using a Geographic Information System (GIS) in this compilation effort. In order to spatially depict the site, points, or boundaries of the site are needed. These were not generally available, especially from herbarium and museum records. The data was reviewed and located as finely as possible, including review of aerial photos and topographic maps to follow features identified on data sheets or collection labels. The categories in the "precision" field of the database were the same as used by the state heritage programs, with the two finest being to the second (approximately 150 ft.) and minute (approximately 1.5 miles) of latitude-longitude. It was determined that 1.5 miles was too indefinite an area to use to plan projects, thus the sites known to approximately 150 ft. were identified as "known sites". For species where fewer than ten sites were known, all sites were considered "exception" sites and were identified as "known sites" for protection. It was considered that losing these sites, even though broadly identified, could be harmful to species persistence. The Known Site Database v. 1.0 was transmitted to the field July 5, 1995 and consisted only of the sites considered as

"known sites" by the above criteria in such a way that points could be put onto local GIS themes for project planning.

All data collected of any precision was compiled and included in the Known Sites Database v. 2.0 which was transmitted to the field on May 28, 1997.

Difficulties in keeping the database up-to-date for all field units as well as the inability to sort some kinds of data in the "Known Sites Database" stimulated development of a more widely useful database. This project is called the Interagency Species Management System (ISMS) and is designed to store all species-specific data at a central point accessible in real-time by both BLM and USFS field staff. Development is nearly completed on this system and a calendar year 1999 release to the field is expected. Data very similar to that collected for the Known Sites Database will be managed in ISMS on all Survey and Manage component 1 and 2 species. Although the database will be stored centrally, GIS coverages will be maintained locally due to the technical complexity of central storage of GIS coverages. It will be uploaded periodically at a regional level.

To facilitate information exchange and dissemination within the BLM and US Forest Service, an IntRAnet site has been established including many aspects of the Northwest Forest Plan. The various planning documents (FEMAT, ROD & S&Gs) are basic to the site. It also contains all BLM memoranda pertaining to survey and manage, as well as copies of all Management Recommendations (MRs) and Survey Protocol documents soon after they are officially transmitted to the field. An information exchange section includes an opportunity for field offices to post information which will facilitate field implementation of S&M requirements.

The workgroup gathered the known information on each of the approximately 280 Component 1 and 2 species and prepared drafts of management recommendations. These documents are probably the most complete single source of information on most of these species. Completed management recommendation documents on approximately 170 bryophytes, fungi, and red tree vole have been sent to the field for implementation and review. Management recommendations for approximately 100 species of vascular plants, lichens, mollusks, and amphibians are in review or revision status at this time and are planned to be released to the field by January of 1999.

Survey protocols for Component 2 species have been developed by the same team members developing the management recommendations. Survey protocols for the great gray owl, five amphibians, and red tree vole were prepared and distributed to the field in time to initiate surveys in 1995, for great gray owl, and prior to 1997 ground-disturbing activities as identified in the ROD for the red tree vole and amphibians. Protocols for 8 bryophytes and lichens have been transmitted to the field. Draft protocols for 43 mollusks were prepared and distributed in training sessions between October 1997 and May 1998. These protocols and one for one component 2 fungus have been officially transmitted to the field. The protocols for 15 vascular plant species

are in preparation and will follow the existing methods now commonly used by agency botanists in surveys for agency sensitive species.

In the process of researching the S&M species, justifications to move species among components, and to correct errors in the S&Gs were also prepared. These followed the process identified on page C-6 for modification, or agency regulations for correcting minor errors. These included *Arceuthobium tsugense* ("hemlock dwarf mistletoe"), lynx, *Buxbaumia piperi*, and the “understory and forest gap herbivores” guild of arthropods.

Three vascular plants and some fungi have been determined to not be in need of this mitigation. Justifications to remove these species from the S&M mitigation have been in preparation. One component 2 fungus species has been determined to be inappropriately placed in Component 2 and justification for moving this species to component 3 is in preparation.

Subgroups focusing on component 3 and 4 species of bryophytes, lichens, and fungi have prepared a plan of work and are surveying for these species starting with those for which there appears to be the greatest risk. Researchers at the USDA Pacific Northwest (PNW) and Pacific Southwest Research Laboratories (PSW) have developed and initiated general regional surveys for two of the arthropod guilds.

In addition to the above efforts, an Interagency Bryologist-Lichenologist and an Interagency Regional Mycologist were hired to direct the component 3 and 4 survey efforts for those taxa, to provide technical advice to the agencies, and training to field staff. The Bryologist, Mycologist, mollusk, and amphibian subgroups have conducted training throughout the region and provide identifications and technical advice to field personnel in addition to their document preparation efforts.

Through the work of both the Survey and Manage regional level workgroup and the surveys of field staff, many new sites of species in all components have been found since 1995.

The agencies have been conducting implementation monitoring of projects that includes monitoring of compliance with Survey and Manage and Protection Buffer standards and guidelines. Implementation monitoring for FY 1996 and FY 1997 has found a high degree of compliance with these standards and guidelines (“Results of the FY 1996 [Pilot Year] Implementation Monitoring Program;” “Results of the FY 1997 Implementation Monitoring Program”).

APPENDIX B — Summary of Species Evaluation by Taxa Specialists and Field Biologists and Botanists - [Listings have been corrected, and reflect errata sheet**]**

Scientific Name	Common Name	Taxonomic Group
Technically Feasible to Survey/Substantially Increased Risk		
Bridgeoporus nobilissimus	Noble polypore	FUNGI
Hypogymnia duplicata	rare leafy lichen	LICHEN
Lobaria linita	rare nitrogen-fixing lichen	LICHEN
Pseudocyphellaria rainierensis	rare nitrogen-fixing lichen	LICHEN
Ptilidium californicum	liverwort	BRYOPHYTE
Deroceras hesperium	Evening fieldslug	MOLLUSK
Hemphillia pantherina	Panther jumping-slug	MOLLUSK
Oreohelix n.sp.	Chelan mountain snail	MOLLUSK
Pristiloma arcticum crateris	Crater Lake tightcoil	MOLLUSK
Coptis trifolia	Threeleaf goldthread	VASCULAR PLANT
Cypripedium montanum (west Cascades)	Mountain lady's slipper	VASCULAR PLANT
Habenaria orbiculata	Round-leaved orchid	VASCULAR PLANT
Technically Feasible to Survey/Not Substantially Increased Risk		
Cryptomastix devia	Puget oregonian	MOLLUSK
Cryptomastix hendersoni	Columbia oregonian	MOLLUSK
Helminthoglypta hertleini	Oregon shoulderband	MOLLUSK
Helminthoglypta talmadgei	Klamath shoulderband	MOLLUSK
Megomphix hemphilli	Oregon Megomphix	MOLLUSK
Monadenia chaceana	Siskiyou sideband	MOLLUSK
Monadenia churchi	Church's sideband	MOLLUSK
Monadenia fidelis minor	Dallas sideband	MOLLUSK
Monadenia troglodytes	Shasta sideband	MOLLUSK
Monadenia troglodytes wintu	Wintu sideband	MOLLUSK
Trilobopsis roperi	Shasta chaparral	MOLLUSK
Trilobopsis tehamana	Tehama chaparral	MOLLUSK
Vertigo n.sp.	Hoko vertigo	MOLLUSK
Hemphillia barringtoni	Keeled jumping-slug	MOLLUSK
Hemphillia malonei	Malone jumping-slug	MOLLUSK
Hemphillia glandulosa	Warty jumping-slug	MOLLUSK
Prophysaon coeuleum	Blue-gray tail-dropper	MOLLUSK
Prophysaon dubium	Papillose tail-dropper	MOLLUSK
Fluminicola seminalis	Nugget pebblesnail	MOLLUSK
Lyogyrus n.sp. 2	Masked duskysnail	MOLLUSK

Vorticifex klamathensis sinitsini	Sinitsin rams-horn	MOLLUSK
Schistostega pennata	moss	BRYOPHYTE
Tritomaria exectiformis	liverwort	BRYOPHYTE
Ulota meglospora	moss	BRYOPHYTE
Allotropa virgata	Sugar stick	VASCULAR PLANT
Aster vialis	Wayside aster	VASCULAR PLANT
Bensoniella oregana	Bensoniella	VASCULAR PLANT
Botrychium minganense	Mingan moonwort	VASCULAR PLANT
Botrychium montanum	Mountain grape-fern	VASCULAR PLANT
Clintonia andrewsiana	Redwood beadlily	VASCULAR PLANT
Coptis asplenifolia	Spleenwort-leaved goldthread	VASCULAR PLANT
Corydalis aquae-gelidae	Cold-water corydalis	VASCULAR PLANT
Cypripedium fasciculatum (Klamath)	Clustered lady's slipper	VASCULAR PLANT
Galium kamtschaticum	Boreal bedstraw	VASCULAR PLANT
Pedicularis howellii	Howell's lousewort	VASCULAR PLANT
Scoliopus biglovei	Bigelow's adder's tongue	VASCULAR PLANT

Not Technically Feasible to Survey/Not Substantially Increased Risk

Bondarzewia montana	Bondarzew's polypore	FUNGI
Aleuria rhenana	Stalked orange peel fungus	FUNGI
Otidea leporina	Rabbit ears	FUNGI
Otidea onotica	Rabbit ears	FUNGI
Otidea smithii	Rabbit ears	FUNGI
Polyozellus multiplex	Blue/black chanterelle	FUNGI
Sarcosoma mexicana	Giant gel cup	FUNGI
Diplophyllum plicatum	liverwort	BRYOPHYTE
Kurzia makinoana	liverwort	BRYOPHYTE
Marsupella emarginata var. *aquatica*	liverwort	BRYOPHYTE
Brotherella roellii	moss	BRYOPHYTE
Buxbaumia viridis	moss	BRYOPHYTE
Rhizomnium nudum	moss	BRYOPHYTE
Tetraphis geniculata	moss	BRYOPHYTE
Vespericola pressleyi	Pressley heperian	MOLLUSK
Vespericola shasta	Shasta hespian	MOLLUSK
Fluminicola n.sp. 1	Klamath pebblesnail	MOLLUSK
Fluminicola n.sp. 2	Tall pebblesnail	MOLLUSK
Fluminicola n.sp. 3	Klamath Rim pebblesnail	MOLLUSK
Fluminicola n.sp. 11	Fredenburg pebblesnail	MOLLUSK
Fluminicola n.sp. 14	Potem pebblesnail	MOLLUSK
Fluminicola n.sp. 15	Flat-top pebblesnail	MOLLUSK
Fluminicola n.sp. 16	Shasta pebblesnail	MOLLUSK

Fluminicola n.sp. 17	Disjunct pebblesnail	MOLLUSK
Fluminicola n.sp. 18	Globular pebblesnail	MOLLUSK
Fluminicola n.sp. 19	Umbilicate pebblesnail	MOLLUSK
Fluminicola n.sp. 20	Lost Creek pebblesnail	MOLLUSK
Juga (Oreobasis) n. sp. 2	Basalt juga	MOLLUSK
Juga (Oreobasis) n. sp. 3	Cinnamon juga	MOLLUSK
Lyogyrus n.sp. 1	Columbia duskysnail	MOLLUSK
Lyogyrus n.sp. 3	Canary duskysnail	MOLLUSK
Vorticifex n.sp. 1	Knobby rams-horn	MOLLUSK

APPENDIX C — Summary of Species-Specific Evaluations

Species: I.1 *Bridgeoporus (=Oxyporus) nobilissimus* (Noble Polypore) **Taxa:** Fungi
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for this fungus has been transmitted to the field units as of this date, and a draft was not made available to participants during training sessions. A standard protocol is currently under review and is expected to be released by the Regional Ecosystem Office to field units in the summer of 1998. The habitat is known, and the species occurs only with *Abies* spp. (usually *A. procera*) stumps, snags, and trees over 100 cm in diameter. The range is recognized as from near Snoqualmie Pass, Washington to the central Oregon Cascade range, which is the potential range of its hosts. The presence of perennial sporocarps allows determination of whether the species is present at a particular location during one year. The species is known from only Seven sites, and failure to survey in potential habitat for FY 1999 projects could result in the loss of individuals that have not yet been detected. Due to the small number of individuals currently documented (about 26 at most) the potential for driving the species to extinction is high.

Results of Initial Core Team Analysis: Technically feasible to survey and a substantial increase in risk to the species if the schedule requiring surveys is changed from FY 1999 to FY 2000.

Response from Field Units to May 1998 Questionnaire: Of the 15 field units that responded for this species, 14 agreed with the results described above and one was unsure. The BLM Salem District responded that even though a protocol was not available, surveyors could use standard methods to find and identify this species. The Klamath National Forest felt that range information was insufficient.

Reconciliation: None needed. Field units generally agreed with the status of this species derived from the taxa team's information.

Core Team Recommendation: Surveys are feasible, and there would be a substantial increase in risk to the species if surveys are not completed for FY 1999 projects.

Pre-ROD Information: This species received a rating by the FEMAT panel which determined there would be a 10 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across federal lands; a 25 percent probability of stabilizing but with gaps in the historic distribution; a 43 percent likelihood of being restricted to refugia; and a 22 percent probability of being extirpated from federal lands (see FEMAT p. IV-43 and IV-81, July 1993). Appendix J2 (February 1994, p. 185) describes the species as endemic to Oregon and Washington with occurrence from Linn County, Oregon to the Snoqualmie Pass in the Cascades and on the Humptulips River on the Olympic Peninsula. Living populations are known from only 6 locations. Habitat is late-successional, especially old-growth forest, on large diameter trees, snag and stumps—never on logs. The species has been found on very large stumps in second-growth forests where it may persist but is not likely to survive. It is closely associated with *Abies*, especially *Abies procera.* Both FEMAT and Appendix J2 identified the genus as Oxyporus.

Pertinent Information Since ROD: The Management Recommendations for Survey and Manage Fungi (Version 2.0, September 1997) identifies the genus change to *Bridgeoporus* and describes the habitat more specifically than Appendix J2 as associated with the collar or root crowns of large diameter (43 inch) old-growth *Abies procera* or *Abies amabilis* living trees, standing dead snags, and stumps. Habitat at known sites (nine) is defined as mesic to wet microsites in forests of all seral stages and a range of disturbance conditions at elevations from 1000 to 4000 feet. Two of the known sites are in late-successional reserves on the Olympic and Mount Hood National Forests, one is within Mount Rainier National Park, three are within administratively withdrawn areas, and three are on matrix lands in 600 acre management reserve areas. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains four sites with a description allowing location to within 1.5 miles of the actual location and three additional sites described at a more general level.

Species: I.2 *Hypogymnia duplicata* (rare leafy lichen) **Taxa:** Lichen
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: A survey protocol for lichens was officially transmitted to field units in March 1998. A taxonomic description is available for identification of the species in the field, and sufficient personnel exist who can reliably identify it. The habitat and range is known well enough to target surveys. The team concluded that there would be a substantially increased risk to the species, particularly in the southern portion of its range, if the schedule is changed from FY 1999 to FY 2000. Surveys have been conducted on all National Forests south of the Mt. Baker-Snoqualmie in Washington, and it has been found only at restricted sites on the Zig Zag Ranger District on the Mt. Hood National Forest, and the Columbia River National Scenic Area. Genetic diversity is the primary concern due to possible inadvertent loss of populations which would be a substantial risk to the species based on existing information.

Results of Initial Core Team Review: Feasible to survey, and a substantially increase in risk to the species if the schedule requiring surveys is changed from FY 1999 to FY 2000.

Response from Field Units to May 1998 Questionnaire: Of the 12 field units that responded for this species, 10 agreed with the results described above, one disagreed with the risk (Roseburg BLM), and one was unsure. Roseburg BLM stated that Oregon Natural Heritage Program determined that this species is not at risk.

Reconciliation: Only One field unit disagreed with the risk assessment based on the ONHP determination, which differs from risk based on a delay of surveys and impacts from FY 1999 projects on federal lands. The other field units' responses and results described above were in agreement.

Core Team Recommendation: Surveys are feasible, and there would be a substantial increase in risk to the species if surveys are not completed for FY 1999 projects.

Pre-ROD Information: This species received a rating by the FEMAT panel for "Rare Leafy Arboreal" lichens which determined there would be a 0 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 63 percent likelihood of being restricted to refugia; and a 17 percent probability of being extirpated from federal lands (see FEMAT p. IV-43 and IV-93, July 1993). Appendix J2 (February 1994, p.226) describes this species as found in coastal montane forests to wet windswept sites in areas with frequent and large quantities of fog and rainfall, and as more common in British Columbia and Alaska. There are 4 known sites in Oregon and Washington.

Pertinent Information Since ROD: The draft survey protocol (Version 2.0, March 1998) for this species describes it as rare within the range of the northern spotted owl, endemic to the Pacific Northwest, and at a higher viability risk in southern Washington and Oregon than in northwestern Washington. The species occurs as an epiphyte on boles and branches of trees. Most known sites are on federal land, and the majority are on the Mount Baker-Snoqualmie National Forest where it is most often found in high precipitation areas in old-growth mountain hemlock/Pacific silver fir forests. It has also been documented at upper elevations in mountain hemlock parkland, in open and patchy subalpine fir forest, and in mature, mixed conifer in northwestern Washington. Habitats where the species has been documented in Oregon vary from mid-elevation, moist western hemlock stands to a red alder snag in a sphagnum bog and on moss-covered basalt outcrops in the Oregon Coast Range. The number of sites is not given, but based on the number of areas identified where it is known, it greatly expanded from the four known sites reported in Appendix J2. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 16 sites with a description allowing location to within 1.5 miles of the actual location and one additional sites described at a more general level.

Species: I.3 *Lobaria linita* (rare leafy lichen) **Taxa:** Lichen
Date: June 8, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: A survey protocol for lichens was officially transmitted to field units in March 1998. A taxonomic description is available for identification of the species in the field, and sufficient personnel exist who can reliably identify it. The habitat and range is known well enough to target surveys. The team concluded that there would be a substantially increased risk to the species, particularly in the portion of its range from the Gifford Pinchot National Forest south to the Roseburg BLM District, if the schedule is changed from FY 1999 to FY 2000. The limited distribution and restricted habitat of the species within the southern portion of its range put it at risk if any additional localized populations are impacted. The species has a spotty distribution and rarely has been found to have sexual reproduction, which makes inadvertent loss of populations a higher risk. The southern populations probably contribute significantly to the genetic diversity of the species.

Results of Initial Core Team Analysis: Feasible to conduct surveys and a substantial increase in risk if the schedule is changed from FY 1999 to FY 2000.

Response from Field Units to May 1998 Questionnaire: Of the 19 field units that responded for this species, 17 agreed with the results described above and two were unsure. One unit (Six Rivers National Forest) that agreed with the above results commented that the habitat for the species is so general, entire project areas will need to be surveyed.

Reconciliation: None needed. Field units agreed with the status of this species derived from the taxa team's information.

Core Team Recommendation: Surveys are feasible, and there would be a substantial increase in risk to the species if surveys are not completed for FY 1999 projects.

Pre-ROD Information: This species received a rating by the FEMAT panel in the group of "Rare Nitrogen-fixing" lichens which determined there would be a 0 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 52 percent likelihood of being restricted to refugia; and a 28 percent probability of being extirpated from federal lands (see FEMAT p. IV-43 and IV-93, July 1993). Appendix J2 (February 1994, p. 228) describes the range as throughout coastal southeast Alaska and British Columbia with reported occurrence in Montana, Idaho, and Norway; it is most common in the Pacific Northwest where it reaches the southern limit of its boreal range. It is known from 10 sites in Washington and one in Oregon, and grows epiphytically on trees and over boulders and mosses. in middle to upper elevation forests (1600 to 6200 feet). This group of lichens that includes *L.linata* generally does not colonize a forested stand until it is over 200 years old when the texture of the bark is suitably rough and the microsite supports an open, multilayered canopy. Most of the known sites for these species are in forests greater than 350 years old.

Pertinent Information Since ROD: The draft survey protocol (Version 2.0, March 1998) describes the range of this species as in Appendix J2, but extends the southern limit of its range to northern California and most common in northwestern Washington within the Pacific Northwest. The protocol reports known occurrences at over 20 locations in Washington (including the western Washington Cascades north of the Snoqualmie River, the Olympic Peninsula), three in Oregon, and one in Humboldt County, California on private land. Habitat is described as old-growth to climax forests in the Pacific Silver Fir Zone and occasionally the Mountain Hemlock Zone where it occurs on the lower boles of conifers, especially *Abies amabilis*. Atypical habitats where it has been found include high-elevation, non-forested sites, on moss in a shrub community dominated by heather at a subalpine site, and the Douglas-fir/Oceanspray-Baldhip Rose plant association in the rain-shadow of the northeastern Olympics. Habitat at known sites in Oregon includes mature Douglas-fir forest with an old-growth structural component and a mossy boulder in an old-growth forest in the transition area between the Western Hemlock Zone and Pacific Silver Fir Zone at about 3,000 feet. The California site was described as an oak forest with rock outcrops. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 37 sites with a description allowing location to within 1.5 miles of the actual location and two additional sites described at a more general level.

Species: I.4 *Pseudocyphellaria rainierensis* (rare leafy lichen) **Taxa:** Lichen
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: A survey protocol was officially transmitted to field units for this species. A taxonomic description is available for identification of the species in the field, and sufficient personnel exist who can reliably identify it. The habitat and range is known well enough to target surveys; discoveries of populations on the Umpqua National Forest and Roseburg BLM indicate that the species occurs further south than previously known. The team concluded that there would be a substantially increased risk to the species if the schedule is changed from FY 1999 to FY 2000. Of the high number of sites (about 1,100) where lichen/ecological surveys have been conducted, it has been found at only 11 sites. It has a restricted, patchy distribution, and genetic diversity would probably be impacted if any populations were inadvertently impacted by FY 1999 projects.

Results of Initial Core Team Analysis: Feasible to conduct surveys and a substantial increase in risk if the schedule is changed from FY 1999 to FY 2000.

Response from Field Units to May 1998 Questionnaire: Of the 15 units that responded for this species, 14 agreed with the results described above and one was unsure.

Reconciliation: None needed. Field units agreed with the status of this species derived from the taxa team's information.

Core Team Recommendation: Surveys are feasible, and there would be a substantial increase in risk to the species if surveys are not completed for FY 1999 projects.

Pre-ROD Information: This species received a rating by the FEMAT panel in the group of "Rare Nitrogen-fixing" lichens which determined there would be a 0 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 52 percent likelihood of being restricted to refugia; and a 28 percent probability of being extirpated from federal lands (see FEMAT p. IV-43 and IV-93, July 1993). Appendix J2 (February 1994, p. 228) identifies the species as a Pacific Northwest endemic that occurs almost exclusively in stands greater than 200 years. It is known from five sites in Oregon within hyper-mesic Cascadian old-growth forest types and the Coast Range, and from 11 in Washington distributed from the Columbia Gorge in the south to the Mount Baker-Snoqualmie National Forest and Olympic National Park in the north.

Pertinent Information Since ROD: The survey protocol (Version 2.0, March 1998) describes this species as rare with a limited distribution throughout the range of the northern spotted owl. It is closely associated with mesic to moist old-growth forests with cool microclimates, and has been reported as an epiphyte on Douglas-fir, Pacific silver fir, western hemlock, subalpine fir, Pacific yew, Sitka spruce, western red cedar, big-leaf maple, vine maple, red alder, cascara, chinquapin, and black cottonwood at sites from 330 to 4000 feet in elevation in Oregon and Washington. Ninety percent of the known sites in Oregon are in old-growth conifer forests, but it may not be restricted to interior forest conditions. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 19 sites with a description allowing location to within 1.5 miles of the actual location.

Species: I.5 *Ptilidium californicum* (liverwort) **Taxa:** Bryophyte
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: A survey protocol was officially transmitted to field units for this species. There is a taxonomic description available for identification in the field, it is easily identified with a hand lens, and sufficient personnel exist who can identify the species. Habitat is not known well enough to target surveys in northern California, but the range is known. Habitat in California is generally described in the protocol as the white fir zone. There is only one known site (based on a voucher specimen) for this species from California, and there would be a substantially increased risk if surveys were not completed for FY 1999 projects until more information is known concerning how extensively it is distributed in northern California.

Results of Initial Core Team Review: Feasible to conduct survey and a substantial increase in risk if the schedule is changed from FY 1999 to FY 2000.

Response from Field Units to May 1998 Questionnaire: Of the 11 units that responded for this species, 10 agreed with the results described above and one disagreed. The Six Rivers National Forest did not agree that sufficient personnel is available to reliably identify the species.

Reconciliation: All but one of the field units agreed with the taxa team's information. The question asked of the taxa team was based on whether there were only a few experts capable of identifying this species, and not whether the individual units had enough personnel to conduct surveys. The species is recognized as extremely rare in northern California, and surveys appear to be feasible based on the protocol and Appendix J2 habitat description (white fir zone in CA) and ease in identification in the field. The protocol indicates that northern California is the ONLY area where surveys are needed.

Core Team Recommendation: Surveys are feasible, and there would be a substantial increase in risk to the species if surveys are not completed for FY 1999 projects located in habitat within its range in northern California.

Pre-ROD Information: This liverwort received a rating by the FEMAT panel which determined there would be a 100 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across federal lands; a 0 percent probability of stabilizing but with gaps in the historic distribution; a 0 percent likelihood of being restricted to refugia; and a 0 percent probability of being extirpated from federal lands (see FEMAT p. IV-43 and IV-103, July 1993). Appendix J2 (February 1994, p. 90) grows on bark of conifer boles and logs, requires cool and moist conditions, exhibits a strong affinity for old-growth white fir forests around 5000 feet in elevation, and is abundant where it occurs. No known site information is given.

Pertinent Information Since ROD: The draft survey protocol (Version 2.0, December 1997) describes this species as widespread in Washington and a species of concern for ONLY northern California, the only area where surveys are required. Viability concerns were based on its uncommon occurrence, narrow distribution, and possible southern limits in northern California, where it is known from one population on white fir. Habitat is characterized as coniferous tree trunks, decaying logs, and stumps. The first known site was “recently” collected on the Shasta-Trinity National Forest in an area administered by the Lassen National Forest.

Species: I.6 *Oreohelix n.sp*. (Chelan Mountain Snail) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to field units, but draft protocols were distributed to participants at training sessions. A taxonomic description of this species is available for identification in the field, and sufficient personnel exist who can reliably identify it. Both the habitat and range is known well enough to target surveys. There would be a substantially increased risk to the species if surveys were not conducted for FY 1999 projects because most of the known sites were destroyed by the Tyee fire; any ground-disturbing activity would impact the species.

Results of Initial Core Team Analysis: Feasible to conduct surveys and a substantial increase in risk if the schedule is changed from FY 1999 to FY 2000.

Response from Field Units to May 1998 Questionnaire: Three field units responded, and all agreed with information provided by the taxa team.

Reconciliation: None needed. The field units' responses and results described above are in agreement.

Core Team Recommendation: Surveys are feasible, and there would be a substantial increase in risk to the species if surveys are not completed for FY 1999 projects.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 40 percent probability of stabilizing, well distributed across Federal lands; a 35 percent probability of stabilizing but with gaps in the historic distribution; a 15 percent chance of being restricted to refugia; and a 10 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Oreohelix n.sp*. (Chelan Mountain Snail) is a talus associate, known from only one site on the Wenatchee National Forest near Lake Chelan.

Pertinent Information since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 44) describes this species as known only from northeastern Chelan County, Washington. It may also be found in parts of Okanogan and Douglas counties, which are adjacent to its known range. The species is difficult to find and its habitat is not known for certain. Originally it was found in schist talus above the southwest shore of Lake Chelan but since then shells have been found in sites without talus. Sites where it has been found are near ridgetops often in small draws, benches, or depressions in open ponderosa pine forest edge with a ground cover of pinegrass or elk sedge. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains eight sites with a description allowing location to within 1.5 miles of the actual location.

Species: I.7 *Hemphilla pantherina* (Panther Jumping-slug) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to field units. However, draft protocols were distributed to participants during training sessions. A taxonomic description of this species is available for identification in the field, and sufficient personnel exist who can reliably identify it. The species is known from a single site near the Lewis River in Skamania County, Washington. The suspected range is throughout the Cascade Range from the Snoqualmie watershed to the Columbia River Gorge at elevations below 915 m. Habitat at the single site was deep forest litter near a stream. A substantially increased risk to the species would occur if the schedule is changed from FY 1999 to FY 2000 because there is only one known site. Protection of other populations is necessary to insure viability.

Results of Initial Core Team Analysis: Feasible to conduct surveys and a substantial increase in risk to the species if the scheduling requiring surveys is changed from FY 1999 to FY 2000.

Response from Field Units to May 98 Questionnaire: All three units that responded for this species agreed with the results described above.

Reconciliation: None needed. The field units' responses and information from the taxa team were in agreement.

Core Team Recommendation: Surveys are feasible, and there would be a substantial increase in risk to the species if surveys are not completed for FY 1999 projects.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 32 percent probability of stabilizing, well distributed across federal lands; a 25 percent probability of stabilizing but with gaps in the historic distribution; a 22 percent chance of being restricted to refugia; and an 22 percent chance of being extirpated from federal lands (see FEMAT p. IV-43 and IV-129). According to Appendix J2, *Hemphilla pantherina* (Panther Jumping-slug) was found in deep forest litter in a riparian zone. It was known from only one locality at Miller Creek Crossing in the Gifford Pinchot National Forest. It had not been relocated at that, or any other, site.

Pertinent Information since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 46) describes this species as known from a single site near the Lewis River, Skamania County, Washington. It is suspected to occur throughout the Cascade Range of western Washington from the Snoqualmie watershed to the Columbia Gorge at elevations below 3000 feet. The known site was in deep forest floor litter near a stream, and its habitat is assumed to be similar to that of other *Hemphillia.*

Species: I.8 *Coptis trifolia* (Threeleaf Goldthread) **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official survey and manage protocol has been transmitted to the field for this species. However, agencies have standardized methods for vascular plant surveys that may be used. A taxonomic description is available for identification in the field, and sufficient personnel can reliably identify it. Habitat and range are known well enough to target surveys. There would be a substantially increased risk to the species if the schedule is changed from FY 1999 to FY 2000 because it is very rare and there are currently only three disjunct populations known located on the Mt. Hood National Forest/Warm Springs Reservation.

Results of Initial Core Team Analysis: Feasible to conduct surveys and a substantial increase in risk to the species if surveys are not completed for FY 1999 projects.

Response from Field Units to May 98 Questionnaire: The two units that responded for this species both agreed with the results described above.

Reconciliation: None needed. The field units' responses and taxa team information are in agreement.

Core Team Recommendation: Surveys are feasible, and there would be a substantial increase in risk to the species if surveys are not completed for FY 1999 projects.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 20 percent probability of stabilizing, well distributed across federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 50 percent chance of being restricted to refugia; and a 0 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-115). Information from Appendix J-2 indicates that this species range is circumboreal, including, in North America, Alaska to southern British Columbia and south to North Carolina, Indiana, Iowa, and Idaho. Within the Forest Plan range, there are 2 disjunct populations in Oregon (one in an LSR, one in a Key Watershed but on non-federal land). Its habitat is on dead wood at the edges of small wetlands in mature and old growth Douglas fir forests. Concern for the species was a lack of inventory information and significance of disjunct populations.

Pertinent Information since ROD: According to the draft Management Recommendation for this species (Version 1.2, November, 1997), there are three sites in Oregon, two in the Riparian Reserves in the Matrix of Mount Hood National Forest and one on Confederated Tribes of the Warm Springs land. Canopy closure in occupied sites varies from 25 to 60 percent, herbaceous ground cover 80 to 100 percent. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains three sites with a description allowing location to within 1.5 miles of the actual location.

Species: I.9 *Cypripedium montanum* (west Cascades (Mountain Lady's Slipper)
Taxa: Vascular Plant
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official survey and manage protocol has been officially transmitted to the field for this species. However, agencies have standardized methods for vascular plant surveys that may be used. A taxonomic description is available for identification in the field, and sufficient personnel can reliably identify it. The species occupies a broad spectrum of plant associations and habitat, and generally habitat is not easily identified. It occurs very sporadically with few stems found per occurrence. There are only four known sites in the West Cascade Province and these sites consist of less than 10 plants. The range extends throughout the Northwest Forest Plan area.

Results of Initial Core Team Analysis: Feasible to conduct surveys and a substantial increase in risk to the species if the schedule requiring surveys is changed from FY 1999 to FY 2000.

Response from Field Units to May 1998 Questionnaire: Of the 20 field units that responded for this species, 18 agreed with the results described above, one disagreed with the risk assessment, and the Six Rivers National Forest provided additional information. The Six Rivers National Forest generally agreed, but suggested that a sampling protocol is needed for this species because its occurrence is sporadic but it can be found anywhere. The Klamath National Forest disagreed that the species is at increased risk on that unit because over 60 populations have been found in a wide variety of habitat and elevations across the forest.

Reconciliation: All but one unit (Klamath National Forest) agreed with the taxa team information and results described above. Data from the Klamath National Forest will be valuable in assessing the overall status of the species throughout its range. The highest concern for risk appears to be for potential populations in western Oregon and Washington.

Core Team Recommendation: Surveys are feasible, and there would be a substantial increase in risk to the species if surveys are not completed for FY 1999 projects particularly in western Oregon and Washington. Surveys should continue for FY 1999 activities with its known range in California so that the overall status of the species can be evaluated.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 0 percent probability of stabilizing, well distributed across federal lands; a 21 percent probability of stabilizing but with gaps in the historic distribution; a 52 percent chance of being restricted to refugia; and a 27 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-115). Information from Appendix J-2 indicates that this species has a broad range from Alaska, south to northern California and east to Montana and Wyoming. It is not known west of the Cascades in Washington, except along the Columbia River. It is scattered across all of Oregon. Concern for the species is in the habitat west of the Cascades where there are fewer than 20 populations. These population are small and scattered. The species has slow establishment and growth rates and the species is declining. The species seems to persist after fire and there may be a relationship between fire and higher numbers of populations. Specific fungi are required for germination and establishment.

Pertinent Information since ROD: According to the draft Management Recommendation for this species (Version 1.0, August, 1996). This species is found in a broad range of habitats, but usually on northern aspects of forests with 60 to 80 percent canopy closure. Mid to late successional forests maybe necessary for the species. There are indications that this species is fire dependent and research showing the contrary. In species establishment, below-ground growth in association with mycorrhizal fungi may last for several months or years before the plant is visible above-ground. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 178 sites with a description allowing location to within 1.5 miles of the actual location and 107 additional sites described at a more general level throughout the entire Northwest Forest Plan range (data not separated by province).

Species: I.10 *Platanthera (Habenaria) orbiculata* (Round-leaved Orchid) **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official survey and manage protocol has been officially transmitted to the field for this species. However, agencies have standardized methods for vascular plant surveys that may be used. A taxonomic description is available for identification in the field, and sufficient personnel can reliably identify it. Both habitat and range are known well enough to target surveys. This species is not on the BLM Special Status Plant list or USFS Regional Forester's Sensitive Species list, so surveys are not currently being conducted for its presence in planned projects. It occurs in many areas with plans for salvage sales and commercial thinning.

Results of Initial Core Team Analysis: Feasible to conduct surveys and a substantial increase in risk to the species if the schedule requiring surveys is changed from FY 1999 to FY 2000.

Response from Field Units to May 1998 Questionnaire: Six field units responded for this species, and all agreed with the results described above.

Reconciliation: None needed. Field units agreed with the status of this species derived from the taxa team's information.

Core Team Recommendation: Surveys are feasible, and there would be a substantial increase in risk to the species if surveys are not completed for FY 1999 projects.

Pre-ROD Information: Information from Appendix J-2 indicates that this species is circumboreal, extending south to California, west to Idaho and Montana, and east to the southern Appalachians. It occurs in damp coniferous forests, balsam-spruce bogs, and tundra. There are 46 sites on Mount Baker Snoqualmie National Forest. Concern existed due to its limited range and habitat and that the protections in the Forest Plan could push increased impacts into this species' habitat.

Pertinent Information since ROD: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 0 percent probability of stabilizing, well distributed across federal lands; a 50 percent probability of stabilizing but with gaps in the historic distribution; a 50 percent chance of being restricted to refugia; and a 0 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-114). Information from the draft Management Recommendation for this species (Version 1.1, October, 1997). It occurs on moderate to mesic sites, at low to mid elevations in western hemlock stands. Based on a sample of Ecology plots, two-thirds of which were placed in stands over 200 years old, most of the sites were in stands over 130 years old though the range of stand ages was from 54-837 years. Mycorrhizal relationships may be important. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 77 sites with a description allowing location to within 1.5 miles of the actual location and 14 additional sites described at a more general level. Approximately 30 of these sites may not be extant. In the range of the Forest Plan, it is only known from Mount Baker Snoqualmie National Forest and North Cascades National Park. Analysis of 47 Mount Baker Snoqualmie Ecology Program Plots shows 64 percent (approximately 32) in LSRs, four percent (two) in Wilderness; 15 percent (seven) in Matrix; 16 percent (eight) in scenic or wildlife management areas (data not available on other locations).

Species: I-II.2 *Pristoloma arcticum crateris* (Crater Lake tightcoil) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: Although a survey protocol for mollusks has not been officially transmitted to field units, draft protocols were available to participants in training sessions. A taxonomic description exists for identification of the species in the field, but there is not sufficient personnel to identify it due to the lack of voucher specimens. The habitat and range are very poorly known. This species is very rare and has only 2 known, disjunct sites. There would be a substantially increased risk if surveys were not completed for FY 1999 projects.

Results of Initial Core Team Analysis: Based on the above information, we considered this species not feasible to survey for FY 1999 projects and at substantially increased risk if surveys for these projects are not completed and sites protected.

Response from Field Units to May 1998 Questionnaire: Of the nine units that responded for this species, five agreed with the results described above, three disagreed, and one was unsure. BLM Roseburg District agreed that the species is difficult to identify, but suggested that surveys are technically feasible. Eugene BLM reported that they have adequate range and habitat information as well as a lab and expertise to identify the species. BLM Klamath Falls Resource Area responded that they have sufficient information on habitat preferences and therefore know where to survey for it; they have an expert from the Roseburg District available to assist with identification.

Reconciliation: Based on the field responses, more units are capable of conducting surveys for this species than believed by the taxa experts, but it is recognized as being very difficult to identify in the field. The Regional Interagency Executive Committee requested that the feasibility of completing surveys for FY 1999 projects be further investigated. Tom Burke, taxa expert, was contacted and responded that the best known information for range and habitat is that the species occurs south of Crater Lake and on the Deschutes National Forest, and is suspected on the Winema, Umpqua, and Willamette above 2,000 feet in elevation in moist conifer forests among mosses near seeps, springs, and riparian areas. If adequate resources were available to make a concerted effort to collect voucher specimens and conduct training, surveys for FY 1999 projects may be technically feasible.

Core Team Recommendation: This species is technically feasible to survey for FY 1999 projects if the Regional Interagency Executive Committee commits the resources needed within the proper time frame to 1) collect voucher specimens at known localities to increase the ability of taxa experts to identify the species, and 2) provide additional training for field personnel. If this is not possible, all projects that may impact habitat need to be identified and postponed until surveys are feasible due to the substantially increased risk to the species if FY 1999 projects in suitable habitat are implemented.

Updated Information: On 6/15/98, Tom Burke reported that he collected a voucher specimsn for this species during a training session. He will confer with Terry Frest during the next month to compare materials, and feels that we can get everything together for training people to recognize the species by this fall.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 40 percent probability of stabilizing, well distributed across Federal lands; a 37 percent probability of stabilizing but with gaps in the historic distribution; a 17 percent chance of being restricted to refugia; and a seven percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Pristoloma arcticum crateris* (Crater Lake tightcoil) occurs in alpine to subalpine habitat in association with leaf litter and cushion plants. The species was known from only one site in Crater Lake National Park, but was likely more widely distributed in high elevation areas of the Winema and Fremont National Forests.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 44) describes this snail as known from south of Crater Lake in Klamath County with an occurrence in Jefferson County, Oregon (including Crater Lake National Park and the Deschutes National Forest) and it is suspected to occur on the Winema, Umpqua, and Willamette National Forests and parts of BLM districts adjacent to these forests east of Interstate 5. It may be found in moist conifer forests and among mosses in other vegetation near wetlands, springs, seeps and riparian areas above 2000 feet in elevation. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains four sites with a description allowing location to within 1.5 miles of the actual location.

Species: I-IV.18 *Deroceras hesperium* (Evening fieldslug) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description is available for identification in the field, but there are not sufficient personnel who can reliably identify this species to survey for FY 1999 projects. The taxa team indicated that little was known concerning risk to this species.

Results of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects. We tentatively classified this species as having no substantial increase in risk from FY 1999 projects.

Response from field units to May 1998 questionnaire: Of the seven units that responded for this species, six agreed with the taxa team's analysis and one disagreed. The BLM Roseburg District replied that this species should be moved to "technically feasible" to survey.

Additional information from Taxa Expert: One of the taxa team members, Tom Burke, was asked to provide additional documentation concerning the team's evaluation of risk. In a letter dated May 11, 1998, Tom provided clarification that little is known about this slug and it has been reported from only three areas. The type locality for the species is the Portland/Lake Oswego area, so it is assumed much of its habitat has already been urbanized. It should be considered a high risk since we do not know whether it still exists, and any occurrence on federal lands could be critical to the species survival.

Reconciliation: Based on the taxa team's analysis, additional clarification from Tom Burke, and the majority of unit responses, the species does appear to be at risk from failure to survey FY 1999 projects. Although it does not appear to be technically feasible to survey for this species at this time, the proposal below provides an option to develop technical feasibility and capability for FY 1999 project reviews.

Core Team Recommendation: Move to "technically feasible, substantial increase" in risk group (Group I). While it may not be currently feasible to survey for this species, we believe the following would allow us to achieve feasibility and survey FY 1999 projects for this species. Our expert would need to first familiarize himself with this species, then train staff to survey for it. We propose that Tom Burke be allocated the resources to become familiar with the species and begin training staff on the forests/districts. If Tom is able to find the species and develop training this year, staff should be allocated to survey beginning this fall. If not, the species should be considered infeasible to survey and decisions made to either delay projects or modify the schedule for implementation.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 30 percent probability of stabilizing, well distributed across federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Deroceras hesperium* (Evening fieldslug) is found in riparian areas and old-growth upland stands. It was originally quite widely distributed, but as of the publication of Appendix J2, was known from only three locations on the Olympic Peninsula. The species was expected to be distributed throughout the western Cascades from British Columbia to the lower Columbia River.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 46) identifies this species as throughout the Olympic Peninsula, Washington and possibly across the Puget Trough to the western Cascade Range and to the Coast Range of northwestern Oregon at elevations below 3000 feet. It is associated with conifer logs and/or heavy ground cover of low vegetation, litter, and debris.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 45) describes the range of this species as low- to mid-elevations between the western Cascade Range and the Pacific Ocean from northwestern Oregon through western Washington and on Vancouver Island, British Columbia. Little is known about this species or its habitat. It has been reported to be associated with a variety of low vegetation, litter, and debris; rocks may also be used.

Species: III.1 *Ulota meglospora* (moss) **Taxa:** Bryophyte
Date: July 15, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No protocol has been written or transmitted to the field. However, standard methods developed for other bryophytes could be used to survey for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because of its relatively broad distribution, which reduces the potential for the FY 1999 projects to substantially affect the species.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the 17 field units responding relative to this species, 11 agreed with the above results; three disagreed with parts of the results that were critical to the result determination; and two were unsure about the results. The BLM Roseburg District was concerned over the lack of a survey protocol. The Six Rivers and Mount Baker-Snoqualmie National Forests did not feel that there were sufficient personnel available who were capable of identifying the species.

Reconciliation: Although no protocol has been written or transmitted to the field, standard methods developed for other bryophytes could be used to survey for this species. While 2 individual units responded that there are not sufficient trained personnel to conduct the surveys, in fact, there are many people, both within government and contract, available that can survey for and identify this species. This question was not whether the unit had enough people trained to do the surveys, but whether there were a very limited number of experts capable of reliably identifying the species. Several training sessions have been offered that include identification of this species.

Core Team Recommendation: Surveys are technically feasible for this species, and there is not a substantial increase in risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the 17 field units responding relative to this species, 6 responded that they were capable of surveying FY 1999 projects for this species and 11 responded that they were not capable. The primary reasons for their inability to survey were a need for additional training (OLY, MBS, WEN, GIP, CGR, WIL, SIS, SIX) and insufficient staff/contractors to conduct surveys (WEN, GIP, CGR, EUG, SIS, MED, ROR, SIX). The BLM Eugene District indicated that they did not survey the projects for this species during their initial surveys due to a lack of the protocol, and they do not have the personnel necessary to resurvey the projects. Although surveys are technically feasible for this species, at the regional scale the agencies lack sufficient trained personnel to conduct the surveys for FY 1999 projects.

Pre-ROD Information: Information included in The Report of the Scientific Analysis Team (SAT Report, March 1993) described the species as "poorly known ecologically," and best developed in very old stands of tanoak, Douglas-fir, and other conifer species further north within its range. The range is identified as northern California and southwest Oregon, and it is noted that the species "is generally scarce throughout its range" (SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 291). This species was included in the group of exterior canopy twig species by the FEMAT bryophyte panel, and the rating indicated a high level of confidence (95 percent probability) that this group would remain well distributed throughout their range and only a 5 percent likelihood of stabilizing but with gaps in the historic distribution. This species is not included in Appendix J-2 (February 1994).

Pertinent Information Since ROD: The draft Management Recommendations (Version 1.1, October 1996) indicate substantially increased information concerning this species. The range is described as from northern California to British Columbia and inland Idaho, and it is described as "common and widespread" on twigs and branches in the canopy of old-growth forests at low- to middle-elevations throughout most of the region. The level of risk to the species based on threats is identified as "low," and information gathered since the SAT Report suggests that protection buffers are not required at all known sites if continuity of habitat over time is provided within the watershed. Sufficient protection may be provided in some areas by riparian reserves, late-successional reserves, and administratively withdrawn areas. Habitat at known sites should be maintained in areas where the species is poorly represented, especially for disjunct or localized populations. The draft Management Recommendations report three known sites on federal land (Olympic and Mount Rainier National Parks and Gifford Pinchot National Forest), and 35 sites in Washington, Oregon, and California. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 35 sites with a description allowing location to within 1.5 miles of the actual location and 11 additional sites described at a more general level.

Species: III.2 *Cryptomastix devia* (Puget oregonian) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl, McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. A taxonomic description of this species is available for identification in the field, and the agencies have employees or contractors who can reliably identify the species. Both habitat and range are adequately known to target surveys. Not surveying FY 1999 projects for this species would not mean a substantially increased risk to the species because populations have been found in 50-60 year-old stands, as well as old-growth stands.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the seven field units responding for this species, five agreed with the above results; one disagreed with the risk determination; and one was unsure about the results. The BLM Roseburg District was concerned that the risk from FY 1999 projects was substantial because the species is uncommon and only one new site has been located since the Northwest Forest Plan was signed. They did not indicate how the regional program of FY 1999 projects would potentially impact the species or how much of the habitat might be affected.

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Reconciliation: Experts disagree on the risk to this species. Although the Roseburg District disagreed with the risk assessment, they are outside the range of the species and may not be aware of the extent of proposed activities within the range. None of the involved units indicated any disagreement with the risk assessment.

Core Team Recommendation: Feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the seven field units responding relative to this species, three responded that they were capable of surveying FY 1999 projects for this species and four responded that they were not capable. The primary reasons for their inability to survey were a need for additional training (OLY, CRG, SIU), insufficient staff/contractors to conduct surveys for FY 1999 projects (CRG, SIU), and the limited window for survey (MTH). Although surveys are technically feasible for this species, four of the seven field units that have this species within the Northwest Forest Plan area lack sufficient trained personnel to conduct the surveys for FY 1999 projects.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a zero percent probability of stabilizing, well distributed across Federal lands; a seven percent probability of stabilizing but with gaps in the historic distribution; a 50 percent chance of being restricted to refugia; and a 43 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128-131). According to Appendix J2, *Cryptomastix devia* (Puget oregonian) ranges from Vancouver Island to the Columbian Gorge. Sites are in the Olympic and Gifford Pinchot National Forests. Habitat is streams, springs and seeps and moist shaded ravines.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 42) describes the range of this snail as the western Cascade Range and Puget Trough at low to moderate elevations from southern Vancouver Island, British Columbia, through western Washington to the Oregon side of the Columbia Gorge. It may be found on or under hardwood logs and leaf litter, and rock and talus may also be used if there are cool and moist areas beneath them. This snail is also found on or in the litter under sword ferns growing under hardwood trees and shrubs, especially big-leaf maples. Young individuals may be found under mosses growing on trunks of big-leaf maples, but in these locations young of *Monadenia fidelis fidelis* are more common and may be mistaken for juvenile *C. devia* when very small. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 36 sites with a description allowing location to within 1.5 miles of the actual location and 32 additional sites described at a more general level.

Species: III.3 *Cryptomastix hendersoni* (Columbia oregonian) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. A taxonomic description of this species is available for identification in the field, and there are employees or contractors who can reliably identify it. Both habitat and range are adequately known to target surveys. Not surveying FY 1999 projects for this species would not mean a substantially increased risk to the species because it is more of a rangeland species than an old-growth species. Activity levels are not expected to change from year to year. Road construction could have potential for adverse impacts.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the three field units responding relative to this species, two agreed with the above results and one disagreed with the risk determination. The BLM Roseburg District was concerned that the risk from FY 1999 projects was substantial because the species is very uncommon. They did not indicate how the regional program of FY 1999 projects would potentially impact the species or how much of the habitat might be affected.

Reconciliation: Experts disagree on the risk to this species. Although the Roseburg District disagreed with the risk assessment for this species, they are outside the range of the species and are likely not aware of the extent of proposed activities within the range. The Columbia River Gorge Scenic Area, the unit within the range of this species and most familiar with the potential impacts of FY 1999 projects, did not disagree with the risk assessment.

Core Team Recommendation: Feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Only the Columbia River Gorge Scenic Area responded relative to this question on this species, indicating that they were not capable of surveying FY 1999 projects for this species. The primary reasons for their inability to survey were a need for additional training and insufficient staff/contractors to conduct surveys feasible to survey for FY 1999 projects and no substantial risk from FY 1999 projects.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 27 percent probability of stabilizing, well distributed across Federal lands; a 22 percent probability of stabilizing but with gaps in the historic distribution; a 25 percent chance of being restricted to refugia; and a 27 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Cryptomastix hendersoni* (Columbia oregonian) is found in talus, springs and seeps of Federal and nonfederal land in the Columbia Gorge.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 42) describes the range of this snail as the Columbia River Gorge in Wasco and Sherman counties, Oregon and Skamania and Klickitat counties, Washington. It may extend north into Yakima County, Washington. Unidentified *Cryptomastix* in eastern Washington may prove to be related. This species is generally found within 100 m of streams, seeps, and springs and may be a riparian associate in steppe communities at low- to mid-elevations. It can be found among moist talus, leaf litter, shrubs, or under logs or other debris. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 50 sites with a description allowing location to within 1.5 miles of the actual location and 14 additional sites described at a more general level.

Species: III.4 *Helminthoglypta hertleini* (Oregon Shoulderband) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. A taxonomic description of this species is available for identification in the field, and there are employees or contractors who can reliably identify it. Both habitat and range are adequately known to target surveys. Implementation of FY 1999 projects for this species would not mean a substantially increased risk unless there is significant road construction through habitat or rock removal from quarry areas.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the 10 field units responding relative to this species, five agreed with the above results; two disagreed with parts of the results that were critical to the result determination; 2 were unsure about the results; and one disagreed with the risk assessment. The Six Rivers National Forest was concerned over the range specificity but did not provide sufficient support. The Klamath National Forest was concerned over the general nature of the habitat description. The BLM Roseburg District was concerned that the risk from FY 1999 projects was substantial because the species is considered very rare (one living specimen has been collected) and because of the type of locality which has been impacted. Also, there is significant potential for impact from grazing, fire, and quarry and road construction. None of the other units reported road construction or rock removal projects that would occur in FY 1999 within habitat that would present an increased risk.

Reconciliation: Although no official protocol has been written or transmitted to the field, draft protocols were handed out to agency staff during training. While there is only one living specimen, there are at least 20 known sites based on the most recent information. This provides some assurance that populations are distributed widely enough to reduce concerns over the impacts from the FY 1999 projects that may impact habitat on the BLM Roseburg District.

Core Team Recommendation: Feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the nine field units responding to this question relative to this species, two responded that they were capable of surveying FY 1999 projects for this species and seven responded that they were not capable. The primary reasons for their inability to survey were a need for additional training (SIS, MED, ROR, NOCA, KLM, SHA, SIX), insufficient staff/contractors to conduct surveys (SIS, MED, ROR, NOCA, KLM, SHA, SIX), and the limited window for survey (NOCA, KLM, SHA, SIX). Although surveys are technically feasible for this species, at the regional scale the agencies lack sufficient trained personnel and a sufficient window of adequate survey conditions to conduct the surveys for FY 1999 projects.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 32 percent probability of stabilizing, well distributed across Federal lands; a 27 percent probability of stabilizing but with gaps in the historic distribution; a 30 percent chance of being restricted to refugia; and a 12 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Helminthoglypta hertleini* (Oregon shoulderband snail) is found in south central Oregon and north central California. Habitat consists of talus and it is partially riparian associated. All known locations are on nonfederal land.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 42) describes the range of this snail as the Klamath Province including Jackson County, Oregon, on or near the BLM Medford District, and Siskiyou County, California with Shasta River sites on or adjacent to BLM land and near the eastern border of the Klamath National Forest. It is suspected as far north as Douglas County, Oregon.. Habitat is rocky areas including talus deposits but it is not necessarily restricted to these areas. It is suspected to be found within its range wherever permanent ground cover and/or moisture is available which may include rock fissures or large woody debris. The species is also adapted to somewhat xeric conditions during a portion of the year. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 14 sites with a description allowing location to within 1.5 miles of the actual location and six additional sites described at a more general level.

Species: III.5 *Helminthoglypta talmadgei* (Klamath Shoulderband) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. A taxonomic description of this species is available for identification in the field, and there are employees or contractors can reliably identify it. Both habitat and range are adequately known to target surveys. Changing the schedule for surveys of FY 1999 projects would not represent a substantially increased risk to the species because Riparian Reserves under the Northwest Forest Plan are expected to offer some protection.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the three units that responded for this species, one agreed with the results described above; one disagreed with parts that were not critical to the result determination; and one disagreed with parts that were critical to the above results. The Shasta-Trinity National Forest disagreed that it is feasible to survey for this species because neither a taxonomic description nor sufficient personnel are available for identification in the field.

Reconciliation: One unit apparently was not aware of the availability of the taxonomic description and the availability of personnel to identify this species in the field.

Core Team Recommendation: Feasible to survey FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the three field offices responding relative to this species, all responded that they were not capable of surveying FY 1999 projects for this species. The primary reasons for the their inability (NOCA, SHA, SIX) to survey were a need for additional training; insufficient staff/contractors to conduct surveys, and the limited biological window of time suitable to conduct the surveys. In addition, there are concerns that the window of time for surveying is too limited.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 27 percent probability of stabilizing, well distributed across Federal lands; a 40 percent probability of stabilizing but with gaps in the historic distribution; a 27 percent chance of being restricted to refugia; and a seven percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Helminthoglypta talmadgei* (Klamath shoulderband snail) is associated with rock talus (probably limestone) habitat of the Hayfork AMA and is not associated with riparian reserves. There are 16 known locations, 13 on Federal land (six in LSRs, seven in AMA), two possible sites on private land, and one on the Hoopa Reservation.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 43) describes the range of this snail as Trinity and Humbolt counties, California which includes federal lands administered by BLM and the Shasta-Trinity and Six Rivers national forests. It inhabits areas within 200 m of limestone rock talus especially near springs or streams, and prefers partial shading. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 22 sites with a description allowing location to within 1.5 miles of the actual location and 3 additional sites described at a more general level.

Species: III.6 *Megomphix hemphilli* (Oregon megomphix) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. A taxonomic description is available for identification in the field, and there are employees or contractors who can reliably identify the species. Both habitat and range are adequately known to target surveys. Not surveying FY 1999 projects for this species would not mean a substantially increased risk to the species because it is associated with hardwood big-leaf maple habitat, a portion of which is likely to be protected in Riparian Reserves.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the 14 field units responding relative to this species, 13 agreed with the above results and one disagreed with the risk determination. The BLM Roseburg District was concerned that the risk from FY 1999 projects was substantial because the species is uncommon and is also patchily distributed in parts of its range; the species would be at risk if maple groves were not protected. They did not indicate how the regional program of FY 1999 projects would potentially impact the species or how much of the habitat might be affected, though they did indicate that three of 12 sites in the Roseburg District would have been lost without surveys.

Reconciliation: Although no official protocol has been written or transmitted to the field, draft protocols were handed out to agency staff during training. While concerns may exist in specific areas, the regional risk for the species in the absence of surveys for FY 1999 projects is acceptable. Significant habitat for the species at the regional level is expected to be protected in Riparian Reserves.

Core Team Recommendation: Feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the 15 field units responding to this question relative to this species, seven responded that they were capable of surveying FY 1999 projects for this species and eight responded that they were not capable. The primary reasons for their inability to survey were a need for additional training (CRG, SIU, COO, ROR, NOCA), insufficient staff/contractors to conduct surveys (CRG, SIU, COO, MED, ROR, NOCA), and the limited window for survey (MTH, COO, NOCA). Although surveys are technically feasible for this species, eight of the 15 field units that have this species within the Northwest Forest Plan area lack sufficient trained personnel and the opportunities to conduct surveys for FY 1999 projects

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 13 percent probability of stabilizing, well distributed across Federal lands; a 33 percent probability of stabilizing but with gaps in the historic distribution; a 37 percent chance of being restricted to refugia; and a 17 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Megomphix hemphilli* (Oregon megomphix) is restricted to the Olympic National Park, and Olympic and Mount Baker-Snoqualmie National Forests. Habitat is not mentioned in Appendix J2.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 43) describes the range of this snail as the Puget Trough of western Washington through the Willamette Valley, Cascade Range foothills, and Coast Range of Oregon. Habitat is within moist conifer/hardwood forests up to 3000 feet in elevation in hardwood leaf litter and decaying non-coniferous plant matter under big-leaf maple trees near rotten logs or stumps. A big-leaf maple component in the tree canopy and an abundance of sword fern on forested slopes and terraces seem characteristic of *Megomphix* sites. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 27 sites with a description allowing location to within 1.5 miles of the actual location and 13 additional sites described at a more general level.

Species: III.7 *Monadenia chaceana* (Siskiyou Sideband) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description of this species is available for identification in the field, and there are employees or contractors who can reliably identify it. The species is only known from Siskiyou County in California, and habitat is not known well enough to target surveys. Not surveying FY 1999 projects for this species would not mean a substantially increased risk to the species because it is a "habitat generalist" so there should be less impact. Based on further review of the draft mollusk protocol, habitat appears to be defined so as to allow targeting for surveys: rocky areas, talus deposits and associated riparian areas, and moist shaded surfaces.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the seven units that responded for this species, five agreed with the taxa team's analysis. The BLM Roseburg District disagreed with the taxa team's conclusion of risk if FY 1999 projects are implemented because this species is distributed in areas where the Forest Service may propose large burns; also grazing, quarrying, and road construction could have significant impacts. The Shasta-Trinity National Forest disagreed that it is feasible to survey for this species because neither a taxonomic description nor sufficient personnel are available for identification in the field.

Reconciliation: Experts disagree on the risk to this species. The BLM Roseburg District is outside of the range and may not be aware of the extent of proposed activities within the range. None of the involved units indicated any disagreement with the risk assessment provided by the taxa team.

Core Team Recommendation: Feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the six field offices responding to this question relative to this species, one responded that they were capable of surveying FY 1999 projects and five responded that they were not capable. The primary reasons for their inability to survey were a need for additional training (ROR, NOCA, KLM, SHA), insufficient staff/contractors to conduct surveys (MED, ROR, NOCA, KLM, SHA), and the limited biological window of time suitable to conduct the surveys (NOCA, KLM, SHA). Although surveys are technically feasible for this species, 5 of the 6 field units that have this species within the Northwest Forest Plan area lack sufficient trained personnel to conduct the surveys for FY 1999 projects.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 23 percent probability of stabilizing, well distributed across Federal lands; a 37 percent probability of stabilizing but with gaps in the historic distribution; a 27 percent chance of being restricted to refugia; and a 13 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Monadenia chaceana* (Siskiyou sideband snail) occurs in shrubby areas and rockslides, both in riparian areas near Shasta and Little Shasta Rivers. There are seven known locations, one on Federal land and six on nonfederal land (Yreka and Holbrook Valley). Thus only a small portion of its range is on Federal lands.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 43) describes the range of this snail as Siskiyou County, California. It may be found in rocky areas, talus deposits and associated riparian areas especially in shrubby areas that indicate more moisture. It can be in or near, but is not restricted to, riparian areas. Any areas that contain moist, shaded surfaces are preferred for daily refuges. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 15 sites with a description allowing location to within 1.5 miles of the actual location and 14 additional sites described at a more general level.

Species: III-IV-III.8 *Monadenia churchi* (Church's Sideband) **Taxa:** Mollusk
Date: September 30, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description of this species is available for identification in the field, and there are employees or contractors who can reliably identify the species with training. A taxa expert indicated that the genus *Monadenia* is easily distinguished, and an individual from the genus would be *M. churchi* if found within the range of this species. Not surveying FY 1999 projects would not mean a substantially increased risk to the species if road construction or rock disturbing activities are not being done in its habitat.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the five units that responded for this species, four agreed with the taxa team's analysis and one disagreed. The Shasta-Trinity National Forest disagreed with the feasibility of completing surveys due to the lack of a taxonomic definition for identification in the field and adequate information to define habitat for target surveys. More than one member of this genus occurs in the area, and identification of the species in the field was considered impossible.

Reconciliation: The Shasta-Trinity National Forest was contacted concerning their feedback on the feasibility of surveying for *M. churchi.* Paula Crumpton, Forest Wildlife Biologist, reported that biologists have recently found *M. churchi* in mossy outcrops and talus at several locations during surveys for salamanders. However, identification was performed at special request of taxa experts and the surveys were not targeted for this mollusk. That experts were needed to identify the species led us to conclude that it was not technically feasible to identify. Subsequent experience has increased the ability for field identification. Thus it is considered to be technically feasible to survey for the species. Rock disturbance associated with timber harvest could occur in its habitat in FY 1999.

Core Team Recommendation: Based on the information provided by the field units and update from the Shasta-Trinity N.F. , it is technically feasible to survey for this species for FY 1999 projects. There would be some level of increased in risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the four field offices responding to this question relative to this species, all were not capable of surveying FY 1999 projects for this species. The primary reasons for the their inability to survey were a need for additional training (NOCA, SHA, SIX), insufficient staff/contractors to conduct surveys (NOCA, SHA, SIX, MEN), and the limited biological window of time suitable to conduct the surveys (NOCA, SHA, SIX, MEN).

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 40 percent probability of stabilizing, well distributed across Federal lands; a 33 percent probability of stabilizing but with gaps in the historic distribution; a 13 percent chance of being restricted to refugia; and a 13 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Monadenia churchi* (Church's sideband snail) is split into eastern (Shasta Lake area) and western (Hayfork AMA area) populations. This species is associated with upland limestone outcrops, and with varied rock types within riparian areas (Shasta Lake area). There are 20 known locations, 13 on Federal lands (five in LSR or wilderness and four in AMA) and three on a combination of Federal and private land.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 43) describes the range of this snail as Shasta, Siskiyou, Trinity, Tehama, and Butte counties, California. It is mainly found in limestone outcrops, caves, and talus slides but also in lava rock slides especially in riparian areas, and under nearby forest debris in heavy shade. The species is not a talus/rock habitat obligate but utilizes this habitat in areas where it provides the best moisture retention and micro-site conditions. Many sites around Shasta Lake are in brush and pine-oak woodland. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 57 sites with a description allowing location to within 1.5 miles of the actual location and 14 additional sites described at a more general level.

Species: III.9 *Monadenia fidelis minor* (Dallas sideband) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. A taxonomic description of this species is available for identification in the field, and there are employees or contractors who can reliably identify the species. Both habitat and range are adequately known to target surveys . Not surveying FY 1999 projects for this species would not mean a substantially increased risk to the species because it is rock associated. Road construction has a potential for risk if extensive.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the three field units responding relative to this species, all agreed with the above results. None indicated a risk from road construction.

Reconciliation: None needed. The field units agreed with the results described above.

Core Team Recommendation: Feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the three field units responding relative to this species, all responded that they were not capable of surveying FY 1999 projects for this species. The primary reasons for their inability to survey were a need for additional training (CRG, NOCA), insufficient staff/contractors to conduct surveys (CRG, NOCA), and the limited window for survey (MTH, NOCA).

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 43 percent probability of stabilizing, well distributed across Federal lands; a 35 percent probability of stabilizing but with gaps in the historic distribution; a 22 percent chance of being restricted to refugia; and a 0 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Monadenia fidelis minor* (Dallas sideband snail) occurs in springs, seeps and talus restricted to the Columbia Gorge a 'significant' part is beyond northern spotted owl range and on nonfederal land.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 43) describes the range of this snail as from the central and eastern Columbia Gorge of Washington and Oregon, and up the Deschutes River as far as 50 miles from its mouth. The species is usually found associated with basalt talus within 200 m of streams, seeps, or springs in dry forest plant communities. It may be found among rocks, shrubs, or other vegetation and seems adapted to more xeric conditions than other members of the genus. It is known to occur with the Larch Mountain salamander. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 27 sites with a description allowing location to within 1.5 miles of the actual location and 16 additional sites described at a more general level.

Species: III.10 *Monadenia troglodytes troglodytes* (Shasta Sideband) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description of this species is available for identification in the field, and there are employees or contractors who can reliably identify the species with training. A substantially increased risk to this species is not expected from FY 1999 projects unless road construction and rock disturbance activities are planned in habitat (brush-covered talus in limestone regions of pine-oak woodland, on calcareous soil, rock outcroppings, and in or near the mouths of caves) within its narrow range along the McCloud River Arm and near Pit Arm of Shasta Lake in Shasta County, California.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the four units that responded for this species, two agreed and two disagreed with the results described above. The Shasta-Trinity National Forest disagreed that it is feasible to survey for this species because a taxonomic description and sufficient personnel are not available for reliable identification in the field.

To specifically follow up on the potential risk to this species from 1999 road construction and rock disturbance projects in habitat, a query was made to biologists who responded to the questionnaire on the Klamath, Shasta-Trinity, and Six Rivers national forests and BLM Northern California District. The Klamath National Forest responded that the range given in the protocol is incorrect and should not include the Klamath National Forest. The Shasta-Trinity National Forest responded that there will be no road construction, rock disturbance, or prescribed burning projects in FY 1999 in suitable habitat. The Six Rivers National Forest reported that no projects were planned that would affect this species. BLM Northern California District identified planned FY 1999 fire, small amounts of road construction, and one or two timber sale projects in suitable habitat.

Reconciliation: One unit disagreed with the technical feasibility of surveying FY 1999 projects for this species, while two agreed that surveys were feasible. One unit did not feel that they should be surveying for the species, as indicated in the draft protocol, as they were not in the range of the species The difference may be due to lack of available expertise and inadequate training of personnel concerning the availability of a taxonomic key and identification of the species in the field.

Core Team Recommendation: There is some question as to the technical feasibility of surveying for this species. However, it may be possible to alleviate this problem with additional training, since two units are capable of conducting surveys. We conclude that it is technically feasible to survey for this species. There may be some risk from FY 1999 projects planned in habitat on the BLM Northern California District.

Operational Feasibility: Of the four field offices responding relative to this species, all responded that they were not capable of surveying FY 1999 projects for this species. The primary reasons for their inability to survey were a need for additional training (NOCA, SHA), insufficient staff/contractors to conduct surveys (NOCA, SHA), and the limited biological window of time suitable to conduct the surveys (NOCA, SHA, MEN). All of the affected field units lack sufficient trained personnel to conduct the surveys for FY 1999 projects, and there are concerns that the window for surveying is too limited.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 33 percent probability of stabilizing, well distributed across Federal lands; a 37 percent probability of stabilizing but with gaps in the historic distribution; a 17 percent chance of being restricted to refugia; and a 13 percent chance of being extripated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Monadenia troglodytes troglodytes* (Shasta sideband snail) has a restricted range along the McCloud River arm of Shasta Lake. Its habitat is shrub covered or lightly forested limestone talus and limestone outcrops. There are few known locations, mostly on Federal land.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 44) describes this snail as known only from Shasta County, California along the McCloud Arm and near the Pit Arm of Shasta Lake. It is usually found in brush-covered talus in limestone regions of pine-oak woodland, on calcareous soil, rock outcrops, and in or near the mouths of caves. Sites do not need to have vegetative cover. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 33 sites with a description allowing location to within 1.5 miles of the actual location and three additional sites described at a more general level.

Species: III.11 *Monadenia troglodytes wintu* (Wintu Sideband) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Sarah Madsen, Cheryl McCaffrey, Robin Bown

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description of this species is available for identification in the field, and there are employees or contractors who can reliably identify the species with training. A substantially increased risk would not occur for this species from FY 1999 projects unless road construction and rock disturbance activities are planned within habitat (within 1 km of limestone areas in brush and pine-oak woodland, often in brush-covered talus) in its restricted range along the Pit River arm of Shasta Lake and over to Squaw Creek and at Mountain Gate in Shasta County, California.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the four units that responded for this species, two agreed and two disagreed with the results described above. The Shasta-Trinity National Forest disagreed that it is feasible to survey for this species because neither a taxonomic description nor sufficient personnel are available for reliable identification in the field.

To specifically follow up on the potential risk to this species from 1999 road construction and rock disturbance projects in habitat, a query was made to biologists who responded to the questionnaire on the Klamath, Shasta-Trinity, and Six Rivers national forests and BLM Northern California District. The Klamath National Forest responded that the range given in the protocol is incorrect and should not include the Klamath National Forest. The Shasta-Trinity National Forest responded that there will be no road construction, rock disturbance, or prescribed burning projects in FY 1999 in suitable habitat. The Six Rivers National Forest reported that no projects were planned that would affect this species. BLM Northern California District identified planned FY 1999 fire, small amounts of road construction, and one or two timber sale projects in suitable habitat.

Reconciliation: There is some question as to the technical feasibility of surveying proposed project areas for this species. It may be possible to alleviate these problems with additional training.

Core Team Recommendation: We conclude that it is technically feasible to survey for this species. There may be some risk from FY 1999 projects planned in habitat on the BLM Northern California District.

Operational Feasibility: Of the four field offices responding relative to this species, all responded that they were not capable of surveying FY 1999 projects for this species. The primary reasons for their inability to survey were a need for additional training (NOCA, SHA),

insufficient staff/contractors to conduct surveys (NOCA, SHA), and the limited biological window of time suitable for conducting surveys (NOCA, SHA, MEN).

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 33 percent probability of stabilizing, well distributed across Federal lands; a 37 percent probability of stabilizing but with gaps in the historic distribution; a 17 percent chance of being restricted to refugia; and a 13 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Monadenia troglodytes wintu* (Wintu sideband snail) has a restricted range along the Pit River arm of Shasta Lake. Its habitat is limestone outcrops. There are few known locations, mostly on Federal land.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 44) describes this snail as known from along the Pit Arm of Shasta Lake over to Squaw Creek and at Mountain Gate in Shasta County, California. The species occurs within one kilometer of limestone areas in brush and pine-oak woodland, often in brush-covered talus. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 16 sites with a description allowing location to within 1.5 miles of the actual location and nine additional sites described at a more general level.

Species: III.12 *Trilobopsis roperi* (Shasta Chaparral) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description of this species is available for identification in the field, and there are employees or contractors who can reliably identify the species with training. A substantially increased risk would not occur for this species from FY 1999 projects unless road construction, rock disturbance, or large-scale prescribed burning is not planned in habitat (associated with or within 100 meters of lightly to deeply shaded limestone, rock slides, draws or caves with a cover of shrubs or oak) within its narrow range in Shasta County, California.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the five units that responded, three agreed with the results described above and two disagreed. The Shasta-Trinity National Forest disagreed that it is feasible to survey for this species because neither a taxonomic description nor sufficient personnel are available for reliable identification in the field. The Klamath National Forest also responded that personnel are not available and that the range of the species is not known well enough to target surveys.

To specifically follow up on the potential risk to this species from 1999 road construction and rock disturbance projects in habitat, a query was made to biologists who responded to the questionnaire on the Klamath, Shasta-Trinity, and Six Rivers national forests and BLM Northern California District. The Shasta-Trinity and Klamath national forests responded that there will be no road construction, rock disturbance, or prescribed burning projects in FY 1999 in suitable habitat. The Six Rivers National Forest reported that approximately 8 miles of road construction, 6 rock disturbance projects, and 2500 acres of prescribed burning are planned in FY 1999 within suitable habitat. BLM Northern California District identified planned FY 1999 fire, small amounts of road construction, and one or two timber sale projects that may affect habitat of this species.

Reconciliation: Although one unit responded it is not feasible to survey for this species, it may be possible to alleviate this problem with additional training.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects. There is some level of increased risk if FY 1999 projects on the Six Rivers National Forest and BLM Northern California District are implemented without surveys.

Operational Feasibility: Of the four field offices responding to this question relative to this species, all stated they were not capable of surveying FY 1999 projects for this species. The

primary reasons for their inability to survey were a need for additional training (NOCA, KLM, SHA, SIX), insufficient staff/contractors to conduct surveys (NOCA, KLM, SHA, SIX), and the limited biological window of time suitable to conduct the surveys (NOCA, KLM, SHA, SIX). All of the affected field units lack sufficient trained personnel to conduct the surveys for FY 1999 projects, and there are concerns that the window for surveying is too limited.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 37 percent probability of stabilizing, well distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 23 percent chance of being restricted to refugia; and a 10 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Trilobopsis roperi*, (Shasta chaparral snail) has a restricted range around Shasta Lake. Its habitat is limestone talus and ridges. There are four known locations, one on Federal land and three on private land.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 45) describes this snail as endemic to Shasta County, California. It is associated with (within 100 meters) lightly to deeply shaded limestone rock slides, draws, or caves with a cover of shrubs or oak. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 17 sites with a description allowing location to within 1.5 miles of the actual location and four additional sites described at a more general level.

Species: III.13 *Trilobopsis tehamana* (Tehama Chaparral) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description of this species is available for identification in the field, and the agencies have employees or contractors who can reliably identify the species with training. A substantially increased risk would not occur for this species from FY 1999 projects if road construction, rock disturbance, or large-scale prescribed burning is not planned within habitat (usually associated with limestone rockslides and also found under leaf litter and woody debris on the ground within 100 m of limestone outcrops) in its restricted range in Tehama, Butte, and Siskiyou counties, California.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys..

Response from Field Units to May 1998 Questionnaire: Of the six units that responded, three agreed with the taxa team's analysis; two disagreed with critical elements of the analysis; and one was unsure about the results. The Shasta-Trinity and Six Rivers National Forests disagreed that it is feasible to survey for this species because neither a taxonomic description nor sufficient personnel are available for reliable identification in the field.

To specifically follow up on the potential risk to this species from 1999 road construction and rock disturbance projects in habitat, a query was made to biologists who responded to the questionnaire on the Klamath, Shasta-Trinity, and Six Rivers national forests and BLM Northern California District. The Shasta-Trinity and Klamath national forests responded that there will be no road construction, rock disturbance, or prescribed burning projects in FY 1999 in suitable habitat. The Six Rivers National Forest reported that approximately 8 miles of road construction, 6 rock disturbance projects, and 2500 acres of prescribed burning are planned in FY 1999 within suitable habitat. BLM Northern California District identified planned FY 1999 fire, small amounts of road construction, and one or two timber sale projects that may affect habitat of this species.

Reconciliation: There is some question as to the technical feasibility of surveying proposed project areas for this species. It may be possible to alleviate these problems with additional training.

Core Team Recommendation: Technical feasibility can be accomplished with additional training. There is some level of increased risk if FY 1999 projects on the Six Rivers National Forest and BLM Northern California District are implemented without surveys.

Operational Feasibility: Of the six field offices responding relative to this species, all responded that they were not capable of surveying FY 1999 projects for this species. The primary reasons for their inability to survey were a need for additional training (ROR, NOCA,

KLM, SHA, SIX), insufficient staff/contractors to conduct surveys (MED, ROR, NOCA, KLM, SHA, SIX), and the limited biological window of time suitable to conduct the surveys (NOCA, KLM, SHA, SIX). All of the affected field units lack sufficient trained personnel to conduct the surveys for FY 1999 projects and there are concerns that the window for surveying is too limited.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 40 percent probability of stabilizing, well distributed across Federal lands; a 33 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a seven percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Trilobopsis tehamana* (Tehama chaparral snail) distribution is limited and brackets *Trilobopsis roperi* disjunctively to the north and south. Its habitat is weakly associated with riparian zones. Some locations are in rockslides within or near riparian areas. There are six known location, four on Federal land (two outside the range of the Northwest Forest Plan) and two on nonfederal land.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 45) describes this snail as endemic to Tehama, Butte, and Siskiyou counties in California. It is usually associated with limestone rock slides and has also been found under leaf litter and woody debris within 100 m of limestone outcrops. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains eight sites with a description allowing location to within 1.5 miles of the actual location and four additional sites described at a more general level.

Species: III.14 *Vertigo n. sp.* (Hoko Vertigo) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description of this species is available for identification in the field, and the agencies have employees or contractors who can reliably identify the species with training. Not surveying FY 1999 projects for this species would not mean a substantially increased risk to the species because on federal lands most of the habitat is within Late-Successional Reserves or National Parks.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Only the Olympic National Forest is within the range of the species, and they agreed with the above assessment. The BLM Roseburg District was concerned over the risk to the species because it has a very limited distribution and the type locality on private land has been logged.

Reconciliation: The only unit with access to this species agreed with the results of the April assessment. Experts disagree on the risk to the species. Although the Roseburg District disagreed with the risk assessment for this species, they are outside the range of the species and may not be aware of the extent of proposed activities within the range. The Olympic National Forest has a large portion of its land base in Late-Successional Reserves or old-growth focused Adaptive Management Areas. None of the involved units indicated any disagreement with the risk assessment..

Core Team Recommendation: Surveys are technically feasible for this species, and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: The Olympic National Forest is not capable of surveying FY 1999 projects for this species because they need additional training. People need to be assigned to train the personnel.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 35 percent probability of stabilizing, well distributed across Federal lands; a 25 percent probability of stabilizing but with gaps in the historic distribution; a 25 percent chance of being restricted to refugia; and a 15 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128-131). According to Appendix J2, *Vertigo n. sp.* (Hoko vertigo), is at 2 sites in forest leaf litter near streams along the Hoko River at private lands on the Olympic Peninsula.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 45) describes this snail as known only from the Hoko River drainage on the Olympic Peninsula in Clallam County, Washington, and is expected to occur on federal lands in the Olympic National Forest and Olympia National Park. It is considered an old-growth forest and riparian species, and may be found on the smooth trunks and lower limbs of deciduous trees and shrubs or in leaf litter under this type vegetation within 200 meters of stream, seeps, or springs. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains one site with a description allowing location to within 1.5 miles of the actual location.

Species: III.15 *Hemphilla malonei* (Malone jumping-slug) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description of this species is available for identification in the field, and the agencies have employees or contractors who can reliably identify the species with training. Not surveying FY 1999 projects for this species would not mean a substantially increased risk to the species because it is fairly well distributed and occurs primarily within the Columbia River Gorge and Bull Run watershed (both areas with limited activities and large amounts of protected areas).

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the four units that responded, two agreed with the results described above, one was unsure, and one disagrees with the risk determination. A mollusk expert at the BLM Roseburg District provided a response indicating a concern that the species is rare and has a limited known distribution, however they also indicated that the District is outside the range of the species and they do not have experience with surveys.

Reconciliation: Although the Roseburg District disagreed with the risk assessment, they are outside of the range of the species. and were not able to evaluate impacts from FY 1999 projects because they did not have information about the extent of proposed activities within the range. None of the involved units indicated any disagreement with the risk assessment. Habitat for this species within the Columbia River Gorge and Bull Run Municipal Watershed is unlikely to be affected because these areas are generally protected. Conclusion - technically feasible; no substantial risk from FY 1999 projects.

Core Team Recommendation: Surveys for this species are feasible for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the four field offices responding relative to this species, one responded that they were capable of surveying FY 1999 projects for this species and three responded that they were not capable. The primary reasons for their inability to survey were a need for additional training (GIP, CRG), insufficient staff/contractors to conduct surveys (GIP, CRG), and the limited biological window of time suitable to conduct the surveys (MTH). Three of the four units within the range of this species are not capable of surveying FY 1999 projects for the species.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 28 percent probability of stabilizing, well distributed across federal lands; a 28 percent probability of stabilizing but with gaps in the historic distribution; a 25 percent chance of being restricted to refugia; and an 18 percent chance of being extirpated from federal lands (see FEMAT p. IV-43 and IV-129). According to Appendix J2, *Hemphilla malonei* (Malone jumping-slug) is a moist forest creature found in nonfederal lands of the western end of the Columbia River Gorge. Appendix J2 (Table J2-8f) indicates that the mitigation "survey for the species and manage individual sites where found" in combination with "manage currently known sites" would bring the species to the point where it would pass the initial screens suggesting the need for no further investigation.

Pertinent Information since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 46) describes this species as endemic to the area of Mt. Hood and the Columbia Gorge in Oregon and Washington at elevations below 4000 feet. It is found in forested habitats with a strong mixed hardwood component, on or under debris, or on the underside of hardwood bark on the ground. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains four sites with a description allowing location to within 1.5 miles of the actual location and two additional sites described at a more general level. The species has been found during field surveys on BLM lands further south than originally described and in the Oregon Coast Ranges.

Species: III.16 *Fluminicola seminalis* (nugget pebblesnail) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description of this species is available for identification in the field, and the agencies have employees or contractors who can reliably identify the species with training. Not surveying FY 1999 projects for this species would not mean a substantially increased risk to the species because it is associated with riparian areas; therefore, Riparian Reserves and Aquatic Conservation Strategy objectives should provide some protection.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the two units that responded, one agreed with the results described above and one disagreed with critical elements of the analysis. The Shasta-Trinity National Forest disagreed that it is feasible to survey for this species because neither a taxonomic description nor sufficient personnel are available for reliable identification in the field.

Reconciliation: There is some question as to the technical feasibility of surveying proposed project areas for this species. It may be possible to alleviate these problems with additional training.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects and no substantially increased risk if FY 1999 projects are not surveyed.

Operational Feasibility: Of the two field offices responding relative to this species, both responded that they were not capable of surveying FY 1999 projects for this species. The primary reasons for their inability to survey were a need for additional training (NOCA, SHA), insufficient staff/contractors to conduct surveys (NOCA, SHA), and the limited biological window of time suitable to conduct the surveys (NOCA). All of the affected field units lack sufficient trained personnel to conduct the surveys for FY 1999 projects and there are concerns that the window for surveying is too limited.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 30 percent probability of stabilizing, well distributed across Federal lands; a 25 percent probability of stabilizing but with gaps in the historic distribution; a 25 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola seminalis* (nugget pebblesnail) historically occurred in the Sacramento, Pit, and McCloud Rivers. It occurs in rivers and large springs. It is thought to be extirpated from 95 percent of former range due to dams, a herbicide spill, and fire with associated salvage logging.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.32) identifies the range of this species as in the Pit River and McCloud River basins. It appears to prefer gravel-cobble substrate and clear, cold flowing water in large rivers. The species has been collected at 32 sites, including two on the Shasta-Trinity National Forest and three in the Whiskeytown Shasta-Trinity National Recreation area. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 50 sites with a description allowing location to within 1.5 miles of the actual location and 10 additional sites described at a more general level.

Species: III.17 *Lyogyrus n. sp. 2* (Masked duskysnail) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. A taxonomic description of this species is available for identification in the field, and the agencies have employees or contractors who can reliably identify the species. Both habitat and range are adequately known to target surveys. Not surveying FY 1999 projects for this species would not mean a substantially increased risk to the species because Riparian Reserves should provide protection for populations.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Only one field unit responded relative to this species, agreeing with the above results.

Reconciliation: None needed. Field unit agreed with the initial analysis.

Core Team Recommendation: Feasible to survey for FY 1999 projects and no substantially increased risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the 2 field units responding to this question relative to this species, one responded that they were capable of surveying FY 1999 projects for this species and one responded that they were not capable. The primary reason for their inability to survey was the need for additional training (OKA). People need to be assigned to train the personnel.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 50 percent probability of stabilizing, well distributed across Federal lands; a 10 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Lyogyrus n. sp. 2* (masked (Washington) duskysnail) occurs in mud sediments of two kettle lakes; one at the Wenatchee National Forest, Chelan County and one private site in Ferry County, Washington.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.28) describes this species as known from 2 kettle lakes in Ferry County, Washington (Curlew Lake) and Chelan County, Washington (Fish Lake which is partially in the Wenatchee National Forest). The original distribution was northern and central Washington on the east side of the Cascades east to the Rockies in Pend D'Oreille, Stevens, Ferry, Okanogan, and Chelan counties, Washington; it was also found in adjacent parts of the Idaho Panhandle and northwestern Montana with a similar geologic history. The species is an inhabitant of kettle lakes within heavily glaciated valleys, and lives in the littoral zone of lakes on the surface of oxygenated mud substrates with macrophytes or empty clam shells. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains three sites with a description allowing location to within 1.5 miles of the actual location.

Species: III.18 *Vorticifex klamathensis sinitsini* (Sinitsin rams-horn) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. A taxonomic description of this species is available for identification in the field, and the agencies have employees or contractors who can reliably identify the species. Both habitat and range are adequately known to target surveys. Not surveying FY 1999 projects for this species would not mean a substantially increased risk to the species because this species is found in fairly large streams and rivers, and the Riparian Reserves should protect most sites for FY 1999 projects.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the two field units responding relative to this species, both agreed with the above results.

Reconciliation: None needed. Field units agreed with the initial analysis.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects and no substantially increased risk if FY 1999 projects are not surveyed.

Operational Feasibility: No field units responded to this question for this species. According to the draft mollusk protocol, only the Shasta-Trinity National Forest is required to survey for this species. Therefore, we assume they have no problems with surveying for this species.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 30 percent probability of stabilizing, well distributed across Federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 25 percent chance of being restricted to refugia; and a 25 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Vorticifex klamathensis sinitsini* (Sinitsin rams-horn) lives in a large, cold spring on cobbles and boulders. The one known site is on private land at Barclay Springs which is in the greater Klamath area.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.30) identifies one known site for this species at Barkley Spring, Upper Klamath Lake, Klamath County, Oregon. Habitat is a large, cold spring with coarse substrates and rapid current velocities. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains two sites with a description allowing location to within 1.5 miles of the actual location.

Species: III.19 *Allotropa virgata* (sugar stick) **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to the field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. This species is not considered sensitive by the state heritage programs.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the 24 field units responding to this question relative to this species, 23 agreed with the above results and one disagreed with the risk determination. The Gifford Pinchot National Forest stated that failure to survey FY 1999 projects could substantially increase the risk to the species but did not provide any details.

Reconciliation: Only the Gifford Pinchot National Forest was concerned about the risk to the species from FY 1999 projects. Given the extensive range of the species, FY 1999 projects would not pose a substantial risk to the species at the regional level.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects and no substantially increased risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the 26 field offices responding relative to this species, 23 responded that they were capable of surveying FY 1999 projects for this species and three responded that they were not capable. The primary reason for their inability to survey was insufficient staff/contractors to conduct surveys for FY 1999 projects (OKA, ROR, SIX).Surveys are technically feasible for this species. At the regional scale, most of the units have the capability to survey for this species, though three indicated they were lacking sufficient trained personnel or contractors to conduct the surveys for FY 1999 projects.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 28 percent probability of stabilizing, well distributed across federal lands; a 53 percent probability of stabilizing but with gaps in the historic distribution; a 16 percent chance of being restricted to refugia; and a four percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-114). Information from Appendix J-2 indicates that this species is widespread (British Columbia to California plus Idaho and Montana) but rare throughout the range. It is rarely observed in northern California. Populations are isolated. Because it is not on agency sensitive species lists, and not tracked by Heritage Programs, site specific data was not available. Data on some sites was included in Forest Service Ecology Plot data, but the number of sites was not presented. It is often associated with decaying wood in old and younger (60 year old) conifer stands with the largest populations in older stands. This species is symbiotic with mycorrhizal fungi. Protection of federal (as well as state and private) populations and avoiding fragmentation were seen as important.

Pertinent Information since ROD: Additional information from the draft of Management Recommendation for this species (Version 2.0, March 1998) includes a May 1997 survey of agency data subsequent to the collection of data for the known sites database with 716 sites: 30 sites in California, 74 in Washington, and 612 in Oregon primarily at higher elevations east of the Cascades. Sixty percent are in the Matrix and AMA and 40 percent in reserves. Populations are usually isolated and small (less than 10 stems) but there are some with greater than 100 stems. Coarse woody debris seems critical and 70 percent canopy closure appears necessary to maintain mycorrhizal hosts. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 142 sites with a description allowing location to within 1.5 miles of the actual location and 93 additional sites described at a more general level.

Species: III.20 *Aster vialis* **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to the field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because the species will continue to surveyed for as a BLM special status species and most of the potential habitat is on BLM lands.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the four field units responding relative to this species, all agreed with the above results.

Reconciliation: None needed. Field unit agreed with the initial analysis.

Core Team Recommendation: Technically feasible to survey and no substantially increased risk if FY 1999 are not surveyed.

Operational Feasibility: Of the five field offices responding to this question relative to this species, all responded that they were capable of surveying FY 1999 projects for this species.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 0 percent probability of stabilizing, well distributed across federal lands; a 48 percent probability of stabilizing but with gaps in the historic distribution; a 53 percent chance of being restricted to refugia; and a 0 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-114). Information from Appendix J-2 indicates that this species is only known from three counties in Oregon, from Eugene to Roseburg. There are about 20 populations, only one of which is non-federal, though it is the largest population. Populations are scattered and most populations are small (less than 100 individuals). This species inhabits mid-successional (80-200 year-old) conifer stands at low elevations, thriving in canopy gaps in old growth or on forest edges. Decreases in light, due to competing vegetation, may be a critical factor in population declines. No species management guide or conservation strategy exists, though completion of a conservation strategy (in preparation) would have improved ratings.

Pertinent Information since ROD: Information from the draft Management Rcommendation for this species (version 2.0, march 1998). There are 32 sites on BLM lands and 24 private or local government sites. Of the 30 BLM sites, 29 sites are in Matrix or an AMA and one is in an ACEC. Plant vigor and reproduction decline as to canopy cover increases. Historically open habitat with scattered large trees or mixed species was maintained by fire. This process may be mimicked by timber harvest only if done by planning for the stand structure and composition which seem optimal for this species. Threats include soil disturbance, both closed and entirely open canopy closures, vegetative competition, habitat fragmentation, fire suppression. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 32 sites with a description allowing location to within 1.5 miles of the actual location and four additional sites described at a more general level.

Species: III.21 *Bensoniella oregana* (California) **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. Taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because the species will continue to be surveyed for as a Forest Service Region 5 sensitive species and a BLM special status species.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the five field units responding relative to this species, four agreed with the above results and one disagreed with parts of the results that were critical to the result determination. The Six Rivers National Forest indicated that the species is not easy to identify due to its presence of look-alike species in the range and habitat.

Reconciliation: None needed. Field unit agreed with the initial analysis. While identification of this species is difficult, professional botanists can learn to identify the species even in the vegetative state.

Core Team Recommendation: Technically feasible to survey and no substantially increased risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: The Record of Decision requirements only pertain to this species where it occurs in the range of the Northwest Forest Plan in California; however, field units outside that area provided responses. Responses on the capability of field units outside the area were not used in this analysis. Two field offices within California responded on this species - the Northern California District of BLM (NOCA) and the Six Rivers National Forest (SIX). Of these NOCA is capable of surveying FY 1999 projects for this species but has limited habitat. The Six Rivers National Forest is not capable of surveying the FY 1999 projects because of insufficient staff/contractors. Although surveys are technically feasible for this species, the 1 field unit that has the bulk of the habitat for this species within the Northwest Forest Plan area lacks sufficient trained personnel to conduct the surveys for FY 1999 projects.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 0 percent probability of stabilizing, well distributed across federal lands; a 0 percent probability of stabilizing but with gaps in the historic distribution; a 50 percent chance of being restricted to refugia; and a 50 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-114). Information from Appendix J-2 indicates that this species is found from Douglas County, Oregon, south to Del Norte Colorado, California. There are 68 records in Oregon and six to seven populations in Californai. The Californai populations are all small or non-vigorous, but only one California population is on Federal land (Six Rivers National Forest). The species occurs on intermittent streams or meadow edges in mixed evergreen and white-fir communities from 3000 to 5000 feet in elevation. It usually occupies upper slopes and ridgetop saddles and less frequently in riparian shrub or forest openings. Soil moisture seems to be an important habitat factor. Timber harvest, road construction, grazing, and fire suppression have impacted the species. It's restricted range, narrow ecological requirements, and small population sizes were factors important in its rating.

Pertinent Information since ROD: Information from the draft Management Recommendation for this species (version 1.1, June 1997) indicates that there are approximately 86 sites in Oregon which are much larger (estimate of 30,000 plants) than those in California (estimate of 3,560 to 6,810 plants). There are six California sites all within six mile area, four on private land and two sites on the Six Rivers National Forest, totaling fewer than 1,000 plants. The species seems to need intermediate conditions of sunlight and moisture. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains nine sites with a description allowing location to within 1.5 miles of the actual location, but this is not broken out by area.

Species: III.22 *Botrychium minganense* **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to the field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because in Oregon and California where the species is not common, many of the known sites are within protected or withdrawn areas.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the 13 field units responding relative to this species, six agreed with the above results; four disagreed with parts of the taxa team's analysis that were not critical to the result determination; one disagreed with the parts of the analysis that are critical to the result determination; and two were unsure about the results. The Mendocino National Forest expressed concern about their ability to identify this species because it is small and similar to other species.

Reconciliation: None needed. Field unit agreed with the initial analysis. While identification may be difficult, professional botanists can learn to identify the species.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects and no substantially increased risk if FY 1999 are not surveyed.

Operational Feasibility: Of the 14 field offices responding to this question relative to this species, 12 responded that they were capable of surveying FY 1999 projects for this species and two responded that they were not capable. The primary reasons for their inability to survey were a need for additional training (SHA), insufficient staff/contractors to conduct surveys (SHA, WEN), and the limited biological window of time suitable to conduct the surveys (WEN). Surveys are technically feasible for this species. At the regional scale, most of the units have the capability to survey for this species, though two indicated operational difficulties.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 30 percent probability of stabilizing, well distributed across federal lands; a 50 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a 0 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-114). Information from Appendix J-2 indicates that this species is widespread in North America from Alaska to Arizona and east to Vermont. Five of the nine populations are in reserves and all populations are on National Forests. It has a wide ecological amplitude, occurring in a wide range of habitats including in riparian zones with old-growth western red cedar with dense shade and mesic to saturated soils on the Mount Hood National Forest.

Pertinent Information since ROD: Information from the draft Management Recommendation for this species (version 2.0, September, 1997) indicates that, as of April, 1997, there were 77 records on syx National Forests in Washington and northwestern Oregon, only 10 of which are in Matrix, one in an AMA in which a timber sale was dropped to protect the species; and nine on private land. In addition to the forested riparian habitat mentioned in Appendix J2, Washington National Forests report all sites of it in subalpine meadows, mossy talus slopes, in shrublands and hardwood stands, in roadcuts and other highly disturbed areas. The Washington Natural Heritage Program recently delisted it from their Sensitive list to their Review list (WDNR August 1997) indicating their lesser level of concern for the species viability. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 79 sites with a description allowing location to within 1.5 miles of the actual location and six additional sites described at a more general level.

Species: III.23 *Botrychium montanum* **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to the field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because many sites are protected under other land use allocations. In Oregon the species is on the BLM special status and Forest Service sensitive species lists resulting in continued surveys regardless of the Survey and Manage status.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the 11 field units responding relative to this species, all agreed with the above results.

Reconciliation: None needed. Field unit agreed with the initial analysis.

Core Team Recommendation: Feasible to survey for FY 1999 projects and no substantial risk from FY 1999 projects. Continue to survey FY 1999 projects.

Operational Feasibility: Of the 12 field offices responding to this question relative to this species, eight responded that they were capable of surveying FY 1999 projects for this species and four responded that they were not capable. The primary reasons for their inability to survey were a need for additional training (SIS, SHA) and insufficient staff/contractors to conduct surveys (WEN, SIS, KLM, SHA). Surveys are technically feasible for this species. At the regional scale, most of the units have the capability to survey for this species, though four indicated operational difficulties.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 30 percent probability of stabilizing, well distributed across federal lands; a 50 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a 0 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-114). Information from Appendix J-2 indicates that this species occurs from British Columbia to California, and east to Montana. Within the area of the Northwest Forest Plan, it is limited to northwestern Washington where all records are from Federal land. There are a limited number of sightings. On Mount Baker-Snoqualmie National Forest, six populations are in LSRs, one in an AMA, and five in Matrix. There are five Oregon populations, two of which are in reserves. Its habitat is western red cedar swamps and appears to require a fungal symbiont for establishment and survival. Most populations occur near the upper ends of small tributaries and headwater springs.

Pertinent Information since ROD: Information from the draft Management Recommendation for this species (version 1.9, April 1998). There are 44 records, all on National Forest land. Of sites considered most important for management, six are in LSRs, two in Riparian Reserves, four in Congressionally or Administratively withdrawn lands (RNAs, Wilderness), one in Matrix. Information on land allocations for other sites not calculated at this time. It is the fungal symbiont that may be most affected. In our range of concern, it occurs in dark coniferous forests usually near swamps and streams from 3300-9800 ft. elevation. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 48 sites with a description allowing location to within 1.5 miles of the actual location and two additional sites described at a more general level.

Species: III.24 *Clintonia andrewsiana* **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to the field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because the species is generally found in an area of the land base where there is little proposed management of an intense nature.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the two field units responding relative to this species, one agreed with the above results and one disagreed with the parts of the analysis that are critical to the result determination. The Six Rivers National Forest expressed concern about their ability to identify this species but provided no specific information.

Reconciliation: None needed. Field unit agreed with the initial analysis. While identification may be difficult, professional botanists can learn to identify the species.

Core Team Recommendation: Feasible to survey for FY 1999 projects and no substantial risk from FY 1999 projects.

Operational Feasibility: Of the two field offices responding to this question relative to this species, one responded that they were capable of surveying FY 1999 projects for this species and one responded that they were not capable. The primary reason for the inability to survey was insufficient staff/contractors to conduct surveys for FY 1999 projects (SIX). Although surveys are technically feasible for this species, one of the two field units that have this species within the Northwest Forest Plan area lacks sufficient trained personnel to conduct the surveys for FY 1999 projects.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 70 percent probability of stabilizing, well distributed across federal lands; a 27 percent probability of stabilizing but with gaps in the historic distribution; a three percent chance of being restricted to refugia; and a 0 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-115). Information from Appendix J-2 indicates that this species occurs in the Klamath range and north and central Coast Ranges south from southwestern Oregon border to Monterey County, California. There is little habitat on Federal land. Most Federal populations occur on Redwood National Park, with some on Six Rivers National Forest and on BLM land. Most of the species range is on state or private land. A count of sites known as of 1994 is not given. It inhabits shaded, damp redwood forests in shrubby understory. Harvest of redwoods and short rotations of harvest are seen as the main threats.

Pertinent Information since ROD: Information from the draft Justification for Survey and Manage Listing Change for *Clintonia andrewsiana* indicates that occurs commonly in 100 year old stands where there is more light penetration than in typical old growth stands. It is common to dominant in the understory in second and third growth stands when left undisturbed for 10-20 years. It persists in selective harvest areas where 60 to 70 percent of the cover has been removed. The habitat of this species is in management allocations precluding timber harvest and ground disturbance. It is not on state or federal sensitive species lists and is considered too common to be considered rare. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 12 sites with a description allowing location to within 1.5 miles of the actual location and 25 additional sites described at a more general level.

Species: III.25 *Coptis asplenfolia* **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to the field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because the species will continued to be surveyed for as a Forest Service Region sensitive species. The species is not suspected on BLM lands.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the four field units responding relative to this species, three agreed with the above results and one disagreed with the risk determination. The Mount Baker-Snoqualmie National Forest was concerned that the risk was not substantial only because it is also a sensitive species, and that otherwise it would be a higher risk.

Reconciliation: None needed. Field unit agreed with the initial analysis. Since there are no proposals to remove this from the Forest Service sensitive list for FY 1999, the protection afforded by this agency designation remains in place; and FY 1999 projects would not pose a substantial risk to the species at the regional level.

Core Team Recommendation: Feasible to survey for FY 1999 projects and no substantial increase in risk from FY 1999 projects.

Operational Feasibility: Of the four field offices responding relative to this species, all responded that they were capable of surveying FY 1999 projects for this species.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 0 percent probability of stabilizing, well distributed across federal lands; a 10 percent probability of stabilizing but with gaps in the historic distribution; a 90 percent chance of being restricted to refugia; and a 0 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-115). Information from Appendix J-2 lists six populations in Washington and two populations in Oregon, all of which are disjunct. Four populations are in LSRs and one is at edge of an administrative withdrawal. The species ranges from British Columbia to northwestern Washington. Its habitat is moist cedar and hemlock stands and bogs in very cool, wet, shady habitat. The limited number of sites was key to its inclusion in the ROD. Protection of small wetlands in late successional and old growth habitats are key.

Pertinent Information since ROD: Additional information from the draft Management Recommendation for this species describes that populations in Washington are in old-growth forests with open to patchy canopy closure in old-growth conifer forests. There is an unconfirmed sighting in Tillamook County, Oregon. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 12 sites with a description allowing location to within 1.5 miles of the actual location and one additional site described at a more general level.

Species: III.26 *Corydalis aquae-gelidae* **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to the field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because sites of this species are generally protected by Riparian Reserves and will continue to be surveyed for as a sensitive species by BLM and Forest Service.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the four field units responding relative to this species, all agreed with the above results.

Reconciliation: None needed. Field unit agreed with the initial analysis.

Core Team Recommendation: Surveys are technically feasible for this species and there is no substantial increase in risk if surveys are not completed for FY 1999 projects.

Operational Feasibility: Of the four field offices responding relative to this species, all responded that they were capable of surveying FY 1999 projects for this species.

Pre-ROD Information: FEMAT analyzed 73 populations (p. IV-20). The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 40 percent probability of stabilizing, well distributed across federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a 2 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-115). Appendix J-2 (p. J2-389) states that the species has a limited range and that 67 percent of the populations are in the Matrix, but does not actually give the number of known sites as of 1994. Appendix J2 Table J2-8d indicates that the mitigation "survey for the species and manage individual sites where found would bring the species to the point where it would pass the initial screens suggesting the need for no further investigation. Appendix J-2 indicates that increased riparian reserve widths (to 300 feet) would reduce the likelihood of the species being restricted to refugia.

Pertinent Information since ROD: Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 94 sites with a description allowing location to within 1.5 miles of the actual location and 12 additional sites described at a more general level.

Species: III.27 *Cypripedium fasciculatum* (Klamath) **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to the field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because the species will continue to be surveyed for on BLM lands as a special status species. The California Forest Service plans to add this species to their sensitive species list next year.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the 15 field units responding relative to this species, 13 agreed with the above results and two disagreed with the parts of the analysis that are critical to the result determination. The Six Rivers and Shasta-Trinity National Forests expressed concern about their ability to identify this species because it is easily overlooked.

Reconciliation: None needed. Field unit agreed with the initial analysis. While identification may be difficult, professional botanists can learn to identify the species.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects and no substantially increased risk from FY 1999 projects.

Operational Feasibility: The Record of Decision requirements only pertain to this species where it occurs in the range of the Northwest Forest Plan in the Klamath Province; however, field units outside that area provided responses. Responses on capability from field units outside the area requiring surveys were not used in this analysis. Of the seven field offices within the Klamath Province (all of which responded on this species), four responded that they were capable of surveying FY 1999 projects for this species and three responded that they were not capable. The primary reasons for their inability to survey were insufficient staff/contractors to conduct surveys for FY 1999 projects (SHA, SIX, MEN) and the limited biological window of time suitable to conduct the surveys (MEN).

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 0 percent probability of stabilizing, well distributed across federal lands; a 43 percent probability of stabilizing but with gaps in the historic distribution; a 38 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-115). Information from Appendix J-2 indicates that this species ranges broadly from Washington to California, east to Colorado, Utah, and Wyoming. Most populations in our range are known from Federal land. One third of known populations are in reserves, but populations are small and scattered. It is known from a variety of habitats from dry to damp soils, stream terraces, rocky to loamy. It is found between 1300 to 5300 feet in 60 to 100 percent shade in mixed evergreen, mixed conifer, and black oak forests. The species is slow to establish but long-lived. Fire may be important to the species. There is little genetic variation among populations indicating that all populations are necessary to prevent extirpation.). It is considered a sensitive species by most states. Concerns include protection of critical stages in life history, fragmentation, fire suppression, trampling, and timber harvest.

Pertinent Information since ROD: Information from the draft Management Recommendation for this species (version. 1.0, November, 1997) indicates that most sites have fewer than 50 stems (usually one to 20), though the largest site had 1000 stems. In Forest Plan area (Wenatchee National Forest in Washington to Klamath National Forest in California) there are 175 records in AMAs or Matrix, 111 in reserves, and 58 on non-federal lands. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 411 sites with a description allowing location to within 1.5 miles of the actual location and 39 additional sites described at a more general level.

Species: III.28 *Galium kamtschaticum* **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to the field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because this species is associated with wet canopy gaps where few projects are planned, and it will continue to be surveyed for as a BLM special status and Forest Service sensitive species.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the four field units responding relative to this species, all agreed with the above results.

Reconciliation: None needed. Field unit agreed with the initial analysis.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects for *Galium kamtschaticum* and no substantially increased risk if FY 1999 projects are implemented without surveys.

Operational Feasibility: Of the four field offices responding relative to this species, all are capable of surveying FY 1999 projects for this species.

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 0 percent probability of stabilizing, well distributed across federal lands; a 70 percent probability of stabilizing but with gaps in the historic distribution; a 30 percent chance of being restricted to refugia; and a 0 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-115). Information from Appendix J-2 indicates that this is a circumboreal species reaching its southern limit in northwestern Washington. There are 41 records all on federal land of which 30 are in reserves and two are in the Matrix. It inhabits moist, cold, coniferous woods, mossy places and thickets. It is mostly in old-growth coniferous forests, though some populations are known from young conifer stands regenerated from clearcuts. A signed Conservation Strategy exists. Despite mitigations, the species may never be well-distributed throughout the range. Based on the new information on distribution in land allocations, Appendix J-2 suggests that a reevaluation of the ratings may be warranted.

Pertinent Information since ROD: Information from the draft Management Recommendation for this species (version 2.0, September, 1997) indicates that there are 88 records. All but two sites are on Federal land, but those two are protected in a State Natural Resources Conservation Area. Most (83 percent) of the populations are in protected land allocations such as LSRs; one percent are in known Riparian reserves, 11 percent are in Matrix or an AMA, one percent are in other categories which could be harvested, four percent are in a state Natural Area, and one percent are on private land. This species would be considered a wetland obligate, and as such, field analysis may find that the federal sites are in riparian reserves. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 60 sites with a description allowing location to within 1.5 miles of the actual location and one additional sites described at a more general level.

Species: III.29 *Pedicularius howelli* (Howell's Lousewort) **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to the field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because most locations are within restricted land allocations and Aquatic Conservation Strategy implementation should provide additional protection (habitat associated with wetland environments).

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the four field units responding relative to this species, three agreed with the above results and one disagreed with the parts of the analysis that are critical to the result determination. The Six Rivers National Forest expressed concern about their ability to identify this species, but provided no specific information.

Reconciliation: None needed. Field unit agreed with the initial analysis. While identification may be difficult, professional botanists can learn to identify the species.

Core Team Recommendation: Technically feasible to survey and no substantially increased risk if FY 1999 projects are not surveyed.

Operational Feasibility: Of the four field offices responding relative to this species, three responded that they were capable of surveying FY 1999 projects for this species and one responded that they were not capable. The primary reason for their inability to survey was insufficient staff/contractors to conduct surveys (SIX).

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 30 percent probability of stabilizing, well distributed across federal lands; a 40 percent probability of stabilizing but with gaps in the historic distribution; a 25 percent chance of being restricted to refugia; and a five percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-116). Information from Appendix J-2 indicates that this species is endemic is endemic from the Siskiyou Mountains in southwestern Oregon to northwestern California, primarily on National Forests. An inventory of 75 to 80 percent of the likely habitat showed 72 populations, with fewer than 500 individuals at most sites. In Oregon, six sites are in Wilderness and four in an AMA. The number of sites and its distribution are limited. It is most common on dry ridges in mixed conifer/shrub communities with five to 40 percent canopy closure and 30 to 80 percent shrub cover. It occurs on edges or small openings where it has shade for part of the day. It may require disturbances such as fire and windthrow for viability. Concerns for viability included the potential shift of timber harvest to its dry upland habitat.

Pertinent Information since ROD: Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 95 sites with a description allowing location to within 1.5 miles of the actual location and three additional sites described at a more general level.

Species: III.30 *Scolipus biglovei* **Taxa:** Vascular Plant
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol has been written or transmitted to the field. However, agencies have standardized methods they use for surveying vascular plants that may be used for this species. A taxonomic description is available for identification in the field, and there are more than a few individuals who can readily identify this species in the field. Not surveying FY 1999 projects would not mean a substantially increased risk to the species because it occurs in land allocations where little intensive management is planned and much of the habitat is in protected areas.

Results of Initial Core Team Analysis: Technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the three field units responding relative to this species, two agreed with the above results and one disagreed with the parts of the analysis that are critical to the result determination. The Six Rivers National Forest expressed concern about their ability to identify this species, but provided no specific information.

Reconciliation: None needed. Field unit agreed with the initial analysis. While identification may be difficult, professional botanists can learn to identify the species.

Core Team Recommendation: Surveys are technically feasible for this species, and there is no substantially increased risk if the schedule is changed from FY 1999 to FY 2000 for implementation of project surveys.

Operational Feasibility: Of the three field offices responding relative to this species, two responded that they were capable of surveying FY 1999 projects for this species and one responded that they were not capable. The primary reason for their inability to survey was insufficient staff/contractors to conduct surveys (SIX).

Pre-ROD Information: The FEMAT viability panel determined that under the Northwest Forest Plan the population of this species would have a 65 percent probability of stabilizing, well distributed across federal lands; a 35 percent probability of stabilizing but with gaps in the historic distribution; a 0 percent chance of being restricted to refugia; and a 0 percent chance of being extirpated from federal lands (FEMAT II-30) (see FEMAT p. IV-43 and IV-117). Information from Appendix J-2 indicates that this species is endemic to California and southern Oregon, where it is considered to be relatively common and under-collected. It occurs primarily in the old growth in shady, mesic understory slopes of the Californian redwood forests. One or two populations have been reported from redwood stands in southwestern Oregon near the coast. Most of the habitat is on state and private, with some on BLM and National Park Service lands. Of the historic sites, few sites may be extant.

Pertinent Information since ROD: Information from the draft proposal for Survey and Manage Listing Change for *Scoliopus biglovei* (November 8, 1996) indicates that this species is not considered sensitive by Federal or state agencies. It is considered to be widespread, but with scattered, dense populations, and is locally common on private and state lands. Populations have probably been reduced by harvest of redwoods, though it is still too common to be considered rare. It occurs in a variety of conifer and mixed evergreen forest types as well as in redwood forests. It occurs with some frequency in shady, second and third growth stands when left undisturbed for 10 to 40 years. Based on the new information a reevaluation of the species may improve evaluation of its quantity, distribution, and abundance. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 18 sites with a description allowing location to within 1.5 miles of the actual location and six additional sites described at a more general level.

Species: III-II.1 *Tritomaria exectiformis* (liverwort) **Taxa:** Bryophyte
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: A survey protocol exists for this liverwort and has been transmitted to field. There is a taxonomic description available for identification of the species, but there are not sufficient personnel who can reliably identify it in the field. Both habitat and range are not known well enough to target surveys. The taxa team concluded that there would be a substantially increased risk to this species if surveys for FY 1999 projects were not completed based on expected timber harvest and fuel/forest health treatments on the Deschutes National Forest.

Results of Initial Core Team Analysis: Not technically feasible for surveys of FY 1999 projects, and a substantially increased risk if surveys for these projects are not completed and sites protected.

Response from Field Units to May 1998 Questionnaire: Of the 17 field units responding for this species, nine agreed with the classification of this species as "not technically feasible and a substantially increased risk from FY 1999 projects;" eight disagreed; and one was unsure. The Rogue River National Forest responded that range and habitat was adequately known in the southern Oregon Cascades portion of the species' range (riparian reserves, along creek banks, and around seeps and springs); personnel were trained to identify liverworts; and there are not many projects in riparian reserves in the Cascades that would pose a substantial increased risk in FY 1999. The Gifford Pinchot National Forest responded that the range is adequately known to target surveys. The Mount Hood National Forest stated they have qualified botanists that can identify the species. BLM Eugene District felt that based on voucher specimens it would be technically feasible to conduct surveys for the species. The Deschutes National Forest response corresponded with Rick Dewey's analysis, above. The BLM Klamath District believes that they know the substrates and habitats suitable for this species, and will be completing surveys for it this summer.

Additional information from Taxa Expert: During the Core Team's follow-up on the taxa team's information, a recognized expert for this species, Rick Dewey from the Deschutes National Forest, disagreed with the risk conclusion. He based this association of the species with wet areas, springs, and seeps which should be protected from thinning or fuels treatment due to the buffering incorporated into these projects; there would be some risk if FY 1999 surveys are not completed for recreation projects in suitable habitat. Rick also believes that the habitat is adequately known to target surveys, and attendees of the regional bryophyte training should be able to identify it. He agreed that there is question concerning the southern range extension.

Reconciliation: Based on the opinion of an expert for this species and the responses from eight units that disagreed with the classification as not technically feasible and a substantial increase in risk, this species was re-evaluated and the status was changed.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects, and not a substantially increased risk from FY 1999 projects.

Pre-ROD Information: This liverwort received a rating by the FEMAT panel which determined there would be a 0% probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across federal lands; a 30% probability of stabilizing but with gaps in the historic distribution; a 40% likelihood of being restricted to refugia; and a 30% probability of being extirpated from federal lands (see FEMAT p. IV-43 and IV-103, July 1993). Appendix J2 (February 1994,
p. 94) describes the range of this species as the west and east slope of the Cascades, Olympic Mountains, and northward (circumboreal). Habitat is shaded, moist soil or rocks from low to high elevation, especially around spring heads. The primary impact is identified as recreational and livestock trampling in riparian areas.

Pertinent Information Since ROD: The draft Management Recommendations (Version 1.1, November 1996) reports 2 known sites for this species on the Deschutes National Forest in Deschutes County, Oregon and 1 from outside the range of the northern spotted owl on the Okanogan National Forest in Washington. Habitat is described as shady, cool moist sites in forests along riparian areas on wet soil banks, especially near spring heads; on decaying logs and associated humus; and on cliffs, ledges, and rock crevices covered with thin, peaty, acidic soil. One of the sites on the Deschutes National Forest is near Tumalo Campground and the other is in a late-successional reserve—both were believed to be at risk due to recreational impacts. The draft survey protocol (Version 2.0, December 1997) characterizes habitat as dry to moist, partially shaded soil or litter, and soil in rock crevices. It is found less frequently on rock or decaying wood. The species has a high tolerance for direct sunlight and a moderate tolerance to changing moisture conditions. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains three sites with a description allowing location to within 1.5 miles of the actual location.

Species: III-IV.14 *Schistostega pennata* (moss) **Taxa:** Bryophyte
Date: July 15, 1998
Compilers: Cheryl McCaffrey, Robin Bown, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: A survey protocol does not exist for this moss, though other helpful documents have been officially transmitted to the field. Descriptions of the species, its habitat, and range do exist in Management Recommendations and a field guide; methods for survey exist in protocols for other moss species which have been transmitted to the field. The species habitat is poorly defined. This species was originally thought to be limited to Washington, but recent surveys have located the species in Oregon. The range is not well understood. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed.

Result of Initial Core Team Analysis: Based on the lack of habitat and range specific information, we did not consider it technically feasible to survey for FY 1999 projects and there was no substantial increase in risk if FY 1999 projects were implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the nine field units responding relative to this species, four agreed with the above rationale; three disagreed with the parts of the analysis that are critical to the result determination; and two were unsure about the rationale. The Gifford Pinchot National Forest and BLM Salem and Coos Bay Districts felt that the habitat was sufficiently defined for surveys. The Salem District felt that the range was also sufficiently defined.

Reconciliation: Three of the nine potentially affected field units felt they could target surveys for this species. While limited habitat and range data may make it difficult to target surveys in areas with a high probability of finding the species, it is possible to locate and identify this species if it occurs in the area of a ground disturbing activity. On further consideration, surveys are likely technically feasible.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects and not a substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The Scientific Analysis Team Report (March 1993) states that the species is rare, occurs on rotten logs and some organic soil, is shade dependent, and its range is restricted to mature western red-cedar forests in the Olympic National Forest and Washington Cascades (SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 291). The FEMAT panel determined there would be a 100% probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across federal lands (FEMAT p. IV-43 and IV-103, July 1993). This species is not described in Appendix J2 (February 1994).

Pertinent Information Since ROD: The draft Management Recommendations for this species (Version 1.1, October 1996) described a much expanded known range from Washington and Montana northward through British Columbia to Alaska; although no known sites exist in Oregon it could possibly be found there. The species occurs on mineral soil in shaded pockets of overturned tree roots (often with standing water much of the year), and in moist crevices and caves. It inhabits lowland forest, often with western red cedar, and requires high humidity and densely shaded microsites. Increased light levels or desiccation from thinning would favor other bryophyte species that would replace *Schistopastega.* The species is reported from eight known sites, with all but one collected prior to 1978; three sites occur in the Olympia National Park and one on the Mount Baker-Snoqualmie National Forest. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains seven sites with a description allowing location to within 1.5 miles of the actual location and nine additional sites described at a more general level.

Species: III-IV.19 *Hemphillia burringtoni* (Keeled jumping-slug) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description is available for identification in the field, and there are sufficient personnel who can reliably identify the species in the field. The species habitat and range are not known well enough to target surveys. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because much of the range has been modified and some of the known sites on the Olympic Peninsula are protected within Late-Successional Reserves or National Parks.

Results of Initial Core Team Analysis: Based on the lack of habitat and range specific information, we did not consider it technically feasible to survey and did not consider it to have a substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from field units to May 1998 questionnaire: Of the three units that responded for this species, one agreed with the taxa team's analysis and one disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical. The Olympic National Forest added that it is not feasible to survey FY 1999 projects for this species due to the lack of personnel resources to complete the needed two visits to each site. The BLM Roseburg District disagreed with the taxa team's conclusion concerning risk, based on a very limited known distribution. They did not indicate how the regional or local program of FY 1999 projects would potentially impact the species or how much of the habitat might be affected.

Reconciliation: Although no official protocol has been written or transmitted to the field, draft protocols were handed out to agency staff during training. Experts disagree on the risk to this species. Although the BLM Roseburg District disagreed with the risk assessment for this species, they are outside the range of the species and may not be aware of the limited extent of proposed activities within the range. None of the involved units indicated any disagreement with the risk assessment. However, the rationale for surveys being infeasible is limited. While it may be difficult to target surveys in areas with a high probability of finding the species, it is possible to locate and identify this species if it occurs in the area of a ground disturbing activity. On further consideration, surveys are likely technically feasible.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects and not a substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 33 percent probability of stabilizing, well distributed across federal lands; a 27 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Hemphilla burringtoni* (Keeled jumping-slug), is found in riparian areas of the Olympic National Forest, Olympic National Park, and Bush Pacific State Park. All know sites are on the Olympic Peninsula.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 46) identifies this species as throughout the Olympic Peninsula, Washington and possibly across the Puget Trough to the western Cascade Range and to the Coast Range of northwestern Oregon at elevations below 3000 feet. It is associated with conifer logs and/or heavy ground cover of low vegetation, litter, and debris. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains one site with a description allowing location to within 1.5 miles of the actual location and five additional sites described at a more general level.

Species: III-IV.20 *Hemphillia glandulosa* (Warty jumping-slug) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description is available for identification in the field, and the agencies have sufficient personnel who can reliably identify the species. The species habitat and range are not known well enough to target surveys. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because of the protection of some known sites within the Olympic National Park.

Results of Initial Core Team Analysis: Based on the lack of habitat and range specific information, we did not consider it technically feasible to survey and did not consider it to have a substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from field units to May 1998 questionnaire: Of the eight units that responded for this species, six agreed with the taxa team's analysis and two disagreed. The Olympic National Forest added that it is not feasible to survey FY 1999 projects for this species due to the lack of personnel resources to complete the needed two site visits. The Wenatchee National Forest responded that the habitat and range of the species is known well enough to find it, and the risk for the species is uncertain.

Reconciliation: Although no official protocol has been written or transmitted to the field, draft protocols were handed out to agency staff during training. However, the rationale for surveys being infeasible is limited. While it may be difficult to target surveys in areas with a high probability of finding the species, it is possible to locate and identify this species if it occurs in the area of a ground disturbing activity. On further consideration, surveys are likely technically feasible.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects and not a substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 20 percent probability of stabilizing, well distributed across Federal lands; a 33 percent probability of stabilizing but with gaps in the historic distribution; a 30 percent chance of being restricted to refugia; and a 17 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Hemphilla glandulosa* (Warty jumping-slug) is found at mid to low elevations of old forests, sometimes in riparian areas. The number of sites and range are unknown but historically included Olympic National Forest and Olympic National Park.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 46) identifies the range of this species as the western Cascade Range to the Pacific Coast from northern Oregon to British Columbia at elevations below 3000 feet. It inhabits habitat similar to that of *H. burringtoni*: conifer logs and/or heavy ground cover of low vegetation, litter, and debris. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 10 sites with a description allowing location to within 1.5 miles of the actual location and 13 additional sites described at a more general level.

Species: III-IV.21 *Prophysaon coeuleum* (Blue-grey tail-dropper) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. The species habitat is poorly defined, consisting of moist coniferous forest. The species range from Washington to northern California and are rarest in Washington. There would not be a substantial increase in risk to the species in the southern part of the range if FY 1999 projects are not surveyed because it is fairly common and unlikely to be affected by FY 1999 projects.

Results of Initial Core Team Analysis: Based on the lack of habitat and range specific information, we did not consider it technically feasible to survey and did not consider it to have a substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from field units to May 1998 questionnaire: Of the 18 field units responding relative to this species, six agreed with the above rationale; 11 disagreed with the parts of the analysis that are critical to the result determination; and one was unsure about the rationale. Ten of the units felt that the species habitat and range were adequately defined, and many have had success in finding and identifying this species.

Reconciliation: Ten of the 18 field units considered this species feasible to survey, and many have already surveyed some areas for this species with success. In addition, the original rationale for surveys being infeasible was limited. While it may be difficult to target surveys in areas with a high probability of finding the species, it is possible to locate and identify this species if it occurs in the area of a ground disturbing activity. On further consideration, surveys are likely technically feasible.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects and not a substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 50 percent probability of stabilizing, well distributed across Federal lands; a 25 percent probability of stabilizing but with gaps in the historic distribution; a 15 percent chance of being restricted to refugia; and a 10 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Prophysaon coeruleum* (blue-grey tail-dropper) occurs in moist conifer forests from mid to low elevations. No specific locations were known at that time. The historic distribution was wide ranging from Puget Sound to the Willamette Valley, of which most sites are now in urban areas.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 46) identifies the range of this slug as the Puget Tough and western Cascade Range of Washington, western Oregon, and northern California. It is suspected to occur on the east slope of the Cascade Range. The species is found in moist conifer and mixed conifer forests at relatively low to fairly high elevations (500 to 3000 feet). In open or dry areas it is usually in sites with higher shade and moisture levels than those of the general forest habitat. It is usually associated with partially decayed logs, leaf and needle litter (especially hardwood leaf litter), mosses, and moist plant associations such as big-leaf maple and sword fern. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains four sites with a description allowing location to within 1.5 miles of the actual location and four additional sites described at a more general level.

Species: III-IV.22 *Prophysaon dubium* (Papillose tail-dropper) **Taxa:** Mollusk
Date: July 15, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. The species habitat is poorly defined, consisting of hardwood log and leaf litter. The species has a wide range. Technically, we do not have the ability to target surveys with a reasonable likelihood for success for this species. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because of its widespread distribution.

Results of Initial Core Team Analysis: Based on the lack of habitat and range specific information, we did not consider it technically feasible to survey and did not consider it to have a substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from field units to May 1998 questionnaire: Of the 20 field units responding relative to this species, 12 agreed with the above rationale; seven disagreed with the parts of the analysis that are critical to the result determination; and one was unsure about the rationale. Seven of the units felt that the species habitat and range were adequately defined, and many have had success in finding and identifying this species.

Rectification: Seven of the 21 field units considered surveying for this species feasible, and many have already surveyed some areas with success. In addition, the original rationale for surveys being infeasible is limited. While it may be difficult to target surveys in areas with a high probability of finding the species, it is possible to locate and identify this species if it occurs in the area of a ground disturbing activity. On further consideration, surveys are likely technically feasible.

Core Team Recommendation: Technically feasible to survey for FY 1999 projects and not a substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 57 percent probability of stabilizing, well distributed across federal lands; a 23 percent probability of stabilizing but with gaps in the historic distribution; a 17 percent chance of being restricted to refugia; and a three percent chance of being extripated from federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Prophysaon dubium* (papillose tail-dropper) occurs in rockslides and riparian areas. Although it is through to be rare, it range is wide and found in one county in Washington, two in Oregon, and one in California. There is one known location on Federal AMA lands.

Pertinent Information Since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 47) describes this slug as widespread, and found sporadically from the east slopes of the Washington Cascade Range to the Olympic Mountains and south into northern California. The species appears to be strongly associated with hardwood logs and leaf litter in sites that are similar but more exposed than those described for *P. coeruleum.* Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 10 sites with a description allowing location to within 1.5 miles of the actual location.

Species: IV.1 *Bondarzewia montana* (Bondarzew's polypore) **Taxa:** Fungus
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No draft or official protocol, or professionally accepted method for surveying, is available for this species. The appearance of the structures necessary to identify this species are highly variable from year to year. It may be several years between conditions that result in fruiting bodies being produced for this species. While surveys might locate some populations if localized conditions are right, the effort is unlikely to locate most populations because conditions are unlikely to be correct in the window available for surveying the FY 1999 projects. This effort is unlikely to do much to protect this species and would pull the limited number of experts from other efforts that will provide much needed information on this and many other fungi species included in the Survey and Manage Standard and Guideline. Technically we do not have the ability to survey for this species on FY 1999 projects because conditions necessary to find the species are unlikely to occur in the next year. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because the species is fairly widely distributed (Jefferson County, Washington, to Humboldt County, California), reducing the potential for the FY 1999 projects to substantially affect the species. We have at least 12 known sites and eight new sites, including a range extension to Snohomish County, Washington.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response from Field Units to May 1998 Questionnaire: Of the 16 field units that responded relative to this species, 14 agreed with the above rationale; one disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical; and one was unsure.

Reconciliation: None needed. Given the inability to identify this species in the field, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: This species received a rating by the FEMAT panel which determined there would be a 30 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across Federal lands; a 25 percent probability of stabilizing but with gaps in the historic distribution; a 30 percent likelihood of being restricted to refugia; and a 15 percent probability of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-81, July 1993). Appendix J2 (February 1994, p.185) describes the species as a rare saprobe causing root rot that is most widespread in North America in the Pacific Northwest. It is generally found throughout the FEMAT area at high elevations in association with late-successional forest and *Abies.*

Pertinent Information Since ROD: The Management Recommendations for Survey and Manage Fungi (Version 2.0, September 1997) identifies the preferred scientific name of this species as *B. mesenterica.* The range is described as from the Washington Cascades and Olympic Peninsula south to coastal California with 12 known sites within the range of the northern spotted owl. Habitat is generally known as late-successional conifer forests in association with stumps or snags. The Management Recommendations recommend changing this taxon from Survey and Manage Component 2 to Components 1 and 3 since sporocarps are ephemeral and produced seasonally with significant annual variation making surveys before ground-disturbing activities impractical. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 10 sites with a description allowing location to within 1.5 miles of the actual location and 25 additional sites described at a more general level.

Species: IV.2 *Aleuria (Sowerbyella) rhenana* **Taxa:** Fungus
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No draft or official protocol, or professionally accepted method for surveying, is available for this species. The appearance of the structures necessary to identify this species are highly variable from year to year. It may be several years between conditions that result in fruiting bodies being produced for this species. While surveys might locate some populations if localized conditions are right, the effort is unlikely to locate most populations because conditions are unlikely to be correct in the window available for surveying the FY 1999 projects. This effort is unlikely to do much to protect this species and would pull the limited number of experts from other efforts that will provide much needed information on this and other fungi species included in the Survey and Manage Standard and Guideline. Technically we do not have the ability to survey for this species on FY 1999 projects because conditions necessary to find the species are unlikely to occur in the next year. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because it has a fairly wide range (San Francisco in California to Mount Rainier in Washington), reducing the potential for the FY 1999 projects to substantially affect the species. We had five sites at the time of the Record of Decision signing and have an additional 11 known sites now.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire Of the 11 field units that responded relative to this species, 10 agreed with the above rationale and one disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical.

Reconciliation: None needed. Field units agreed with the elements of the analysis on which the feasibility of surveying were based.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: Information included in the Scientific Analysis Team Report (SAT Report, March 1993) described the species as a "conifer litter decomposer" that is "widely distributed but rare and little known throughout its range," with one collection from Mt. Rainier National Park.(SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 292). This species received a collective rating by the FEMAT panel for the Rare Cup Fungi group, which determined there would be a 0 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across Federal lands; a 35 percent probability of stabilizing but with gaps in the historic distribution; a 38 percent likelihood of being restricted to refugia; and a 28 percent probability of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-81, July 1993). The description in Appendix J-2 (p. 197-198, February 1994) indicates the species is widespread but rare, only found in late-successional conifer forests, and dependent on well-developed conifer litter but independent of species (e.g. redwood, Douglas-fir). Appendix J2 stated that five populations were known in the Pacific Northwest from near San Francisco to Mt. Rainier, and that the species has a remarkably wide range in latitude and altitude from sea level to near treeline.

Pertinent Information Since ROD: The Management Recommendations for Survey and Manage Fungi (Version 2.0, September 1997) places this species in Group 22 as a Rare Gilled Mushroom which also includes Rare Resupinates and Polypores (*Otidea* spp.) (p.10). The preferred name is identified as *Sowerbyella rhenana*.. The range is described as from Clallam County, Washington south to Sonoma County, California, and the species is at the northern limit of its range in Washington. Habitat is identified as accumulated duff and humus in low- to mid-elevation mixed conifer or conifer-hardwood forests, and habitat of the mycelium is unknown but could include duff, litter, mineral soil, woody debris, or roots. It is the only species of Sowerbyella currently documented in the Pacific Northwest and is known from 10 sites within the range of the northern spotted owl: one is on congressionally withdrawn land, two within a late successional reserve, two on matrix land, and six on non-federal land. The Management Recommendations suggest that the known sites on the Mt. Hood National Forest, Cispus Environmental Learning Center, and the Salem District of the Bureau of Land Management have good potential to be managed to maintain viability. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 10 sites with a description allowing location to within 1.5 miles of the actual location and 16 additional sites described at a more general level.

Species: IV.3 *Otidea leporina* (fungus) **Taxa:** Fungi
Date: July 16, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No draft or official survey protocol, or professionally accepted method for surveying, is available for this species. There is no taxonomic description for identifying the species in the field, and it cannot be distinguished from other taxa without microscopic spore measurements. The species is annually variable in its occurrence, so it would require more than one year to complete surveys. While surveys might locate some populations if localized conditions are right, the effort is unlikely to locate most populations because conditions are unlikely to be correct in the window available for surveying the FY 1999 projects. This effort is unlikely to do much to protect this species and would pull the limited number of experts from other efforts that will provide much needed information on this and other fungi species included in the Survey and Manage Standard and Guideline. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because it has a fairly wide range in Washington, reducing the potential for the FY 1999 projects to substantially affect the species. We had five known sites at the time of the Record of Decision signing and have an additional three known sites now.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the 16 units that responded for this species, 11 agreed with the taxa team's analysis; two were unsure; and one disagreed with parts of the taxa team's analysis that were not critical to the result determination and agreed with the parts that were critical. One unit disagreed with the taxa team concerning the availability of a taxonomic description for the species, which the Mt. Hood National Forest stated was found in the draft management recommendations.

Reconciliation: None needed. The field unit response did not substantially differ from the taxa team's analysis. Even if a taxonomic description of the species were available for identification in the field, other critical factors make completion of field surveys infeasible.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: Information included in The Report of the Scientific Analysis Team (SAT Report, March 1993) described the species with *O. onotica* and *O. smithii* as "dependent on older age forests," "widespread in distribution but uncommon," and occurring in conifer duff (SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 292). This species received a collective rating by the FEMAT panel for the Cup Fungi group, which determined there would be a 70 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 0 percent likelihood of being restricted to refugia; and a 0 percent probability of being extirpated from Federal lands (FEMAT p. IV-43 and IV-81, July 1993). Appendix J-2 (p. 192, February 1994) describes the species with *O. onotica* and *O. smithii* as a widespread but uncommon saprobe that occurs on conifer duff in moist to wet, late-successional, mid-to low-elevation stands throughout the FEMAT region. The recommendation in Appendix J2 was to change the original FEMAT rating to 60-20-15-5 based on uncertainty of availability of habitat. The number of known sites was not described.

Pertinent Information Since ROD: The Management Recommendations for Survey and Manage Fungi (Version 2.0, September 1997) places this species in Group 22 which includes Rare Resupinates and Polypores (*Otidea leporina, O. onotica, and O. smithii*) and Rare Gilled Mushrooms (*Aleuria rhenana* and *Pseudaleuria quinaultiana*). The range of *Otidea leporina* is described as the Washington Cascades, Willamette Valley in Oregon, and the Coast Range of California and it is characterized as widespread in conifer forests of the North Temperate zone. The habitat of this species, and all *Otidea* taxa, cannot be documented more specifically than "conifer forest" due to inadequate documentation of collections. It is known from five sites within the range of the northern spotted owl: three are on non-federal land and two are in Mount Rainier National Park and Point Reyes National Seashore. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 43 sites with a description allowing location to within 1.5 miles of the actual location and 61 additional sites described at a more general level.

Species: IV.4 *Otidea onotica* (fungus) **Taxa:** Fungi
Date: July 16, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No draft or official survey protocol, or professionally accepted method for surveying, is available for this species. No taxonomic description has been developed for identifying the species in the field, and it cannot be distinguished from other taxa without microscopic spore measurements. The species is annually variable in its occurrence, so more than one year could be required to determine whether it is present. While surveys might locate some populations if localized conditions are right, the effort is unlikely to locate most populations because conditions are unlikely to be correct in the window available for surveying the FY 1999 projects. This effort is unlikely to do much to protect this species and would pull the limited number of experts from other efforts that will provide much needed information on this and other fungi species included in the Survey and Manage Standard and Guideline. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because it has a fairly wide range (King County, Washington, to Del Norte County, California), reducing the potential for the FY 1999 projects to substantially affect the species. We have at least an additional 10 known sites since the signing of the Record of Decision.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects but no substantial increase in risk from FY 1999 projects.

Response From Field Units to May 1998 Questionnaire: Of the 13 units that responded for this species, 10 agreed with the taxa team's information; one was unsure; and one disagreed with parts of the taxa team's information that were not critical to the result determination and agreed with the parts that were critical. One unit disagreed with the taxa team's information concerning the availability of a taxonomic description for the species, which the Mt. Hood National Forest stated was found in the draft management recommendations.

Reconciliation: None needed. The field unit response did not substantially differ from the taxa team's analysis. Even if a taxonomic description of the species were available for identification in the field, other critical factors make completion of field surveys infeasible.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk from FY 1999 projects.

Pre-ROD Information: Information included in The Report of the Scientific Analysis Team (SAT Report, March 1993) described the species with *O. leporina* and *O. smithii* as "dependent on older age forests," "widespread in distribution but uncommon," and occurring in conifer duff (SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 292). This species received a collective rating by the FEMAT panel for the Cup Fungi group, which determined which determined there would be a 70 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 0 percent likelihood of being restricted to refugia; and a 0 percent probability of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-81, July 1993). Appendix J-2 (p. 192, February 1994) describes the species with *O. leporina* and *O. smithii* as a widespread but uncommon saprobe that occurs on conifer duff in moist to wet, late-successional, mid-to low-elevation stands throughout the FEMAT region. The recommendation in Appendix J2 was to change the original FEMAT rating to 60-20-15-5 based on uncertainty of availability of habitat. The number of known sites was not described.

Pertinent Information Since ROD: The Management Recommendations for Survey and Manage Fungi (Version 2.0, September 1997) places this species in Group 22 which includes Rare Resupinates and Polypores (*Otidea leporina, O. onotica, and O. smithii*) and Rare Gilled Mushrooms (*Aleuria rhenana* and *Pseudaleuria quinaultiana*). The range of *Otidea onotica* is described as the Oregon and Washington Cascades and the Oregon and California Coast Ranges, and as widepsread in conifer forests of the North Temperate zone. The habitat of this species, and all *Otidea* taxa, cannot be documented more specifically than "conifer forest" due to inadequate documentation of collections. The species is known from seven sites within the range of the northern spotted owl: five are on non-federal land; one is on administratively withdrawn land on the Mount Hood National Forest; and one is on congressionally withdrawn land in Mt. Rainier National Park. The site on the Mount Hood National Forest has good potential to be managed to maintain viability of the taxon. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 30 sites with a description allowing location to within 1.5 miles of the actual location and 49 additional sites described at a more general level.

Species: IV.5 *Otidea smithii* **Taxa:** Fungus

Date: July 16, 1998

Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No draft or official survey protocol, or professionally accepted method for surveying, is available for this species. The appearance of the structures necessary to identify this species are highly variable from year to year. It may be several years between conditions that result in fruiting bodies being produced for this species. While surveys might locate some populations if localized conditions are right, the effort is unlikely to locate most populations because conditions are unlikely to be correct during the window available for surveying the FY 1999 projects. This effort is unlikely to do much to protect this species and would pull the limited number of experts from other efforts that will provide much needed information on this and other fungi species included in the Survey and Manage Standard and Guideline. Technically we do not have the ability to survey for this species on FY 1999 projects because conditions necessary to find the species are unlikely to occur in the next year. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because it has a fairly wide range (throughout the Northwest Forest Plan area), reducing the potential for the FY 1999 projects to substantially affect the species. Since the Forest Ecosystem Management Assessment Team Report, we have relocated vague historic sites in California and located two new sites in Oregon.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the 14 field units that responded relative to this species, 11 agreed with the above rationale; two disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical; and one was unsure.

Reconciliation: None needed. None of the field units disagreed with the elements of the taxa team information that was used to determine survey feasibility. Given the inability to identify this species in the field, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: Information included in The Report of the Scientific Analysis Team (SAT Report, March 1993) described the species with *O. leporina* and *O. onotica* as "dependent on older age forests," "widespread in distribution but uncommon," and occurring in conifer duff (SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 292). This species received a collective rating by the FEMAT panel for the Cup Fungi group, which determined which determined there would be a 70 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 0 percent likelihood of being restricted to refugia; and a 0 percent probability of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-81, July 1993). Appendix J-2 (p. 192, February 1994) describes the species as a "Pacific Northwest endemic" saprobe that occurs on conifer duff in moist to wet, late-successional, mid-to low-elevation stands. The recommendation in Appendix J2 was to change the original FEMAT rating to 60-20-15-5 based on uncertainty of availability of habitat. The number of known sites was not described.

Pertinent Information Since ROD: The Management Recommendations for Survey and Manage Fungi (Version 2.0, September 1997) places this species in Group 22 which includes Rare Resupinates and Polypores (*Otidea leporina, O. onotica, and O. smithii*) and Rare Gilled Mushrooms (*Aleuria rhenana* and *Pseudaleuria quinaultiana*). *Otidea smithii* is described as extremely rare in this region, known only from two sites in the Washington Cascades and one historic population in Del Norte County, California. It is endemic to the Pacific Northwest with known sites in Washington and California, and reported occurrence in Idaho and British Columbia. The habitat of this species, and all *Otidea* taxa, cannot be documented more specifically than "conifer forest" due to inadequate documentation of collections. The two known sites in Washington are in Mount Rainier National Park and the Cispus Environmental Learning Center. The locality data for the historic site (1937) in California is vague. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains three sites with a description allowing location to within 1.5 miles of the actual location and 11 additional sites described at a more general level.

Species: IV.6 *Polyozellus multiplex* **Taxa:** Fungus
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No draft or official survey protocol, or professionally accepted method for surveying, is available for this species. The appearance of the structures necessary to identify this species are highly variable from year to year. It may be several years between conditions that result in fruiting bodies being produced for this species. While surveys might locate some populations if localized conditions are right, the effort is unlikely to locate most populations because conditions are unlikely to be correct in the window available for surveying the FY 1999 projects. This effort is unlikely to do much to protect this species and would pull the limited number of experts from other efforts that will provide much needed information on this and other fungi species included in the Survey and Manage Standard and Guideline. Technically we do not have the ability to survey for this species on FY 1999 projects because conditions necessary to find the species are unlikely to occur in the next year. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because it has a fairly wide range (Skagit County, Washington, to Humbolt County, California), reducing the potential for the FY 1999 projects to substantially affect the species.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the 12 field units that responded relative to this species, 11 agreed with the above rationale and one disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical.

Reconciliation: None needed. None of the field units disagreed with the elements of the taxa team information that was used to determine survey feasibility. Given the inability to identify this species in the field, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: Information included in The Report of the Scientific Analysis Team (SAT Report, March 1993) described the species as ecologically in the same species group as *Albatrellus caeryliopus* and others, but as occurring at a higher elevation in the Cascades within silver fir and mixed conifer (which is outside the range of marbled murrelet mitigations). It is a mychorrizal species and a good indicator of old-growth forests (SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 292). The FEMAT panel rating (July 1993) determined that there would be a 22 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across Federal lands; a 43 percent probability of stabilizing but with gaps in the historic distribution; a 27 percent likelihood of being restricted to refugia; and a 8 percent probability of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-80 as "Chanterelle-POMU, Rare," in Table IV-17). This species was not described in Appendix J2 (February 1994).

Pertinent Information Since ROD: The Management Recommendations for Survey and Manage Fungi (Version 2.0, September 1997) places this species in Group 6—it is the only species in this "Rare Chanterelle" group. The range is identified as the Coast and Cascade ranges in Washington, Oregon, and California (and also occurs south to New Mexico and east to Maine). This species occurs in association with roots of *Abies* spp. in late-successional, mid-elevation, montane, conifer forests, and is characterized as "regionally rare." It is known from 10 sites within the range of the northern spotted owl: one site on administratively withdrawn land; three sites on congressionally withdrawn land; two sites in late-successional reserves; and one site in matrix. Only four sites located on the Gifford Pinchot, Mt. Hood, and Willamette National Forests have good potential to be managed to maintain population viability. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains eight sites with a description allowing location to within 1.5 miles of the actual location and 29 additional sites described at a more general level.

Species: IV.7 *Sarcosoma mexicana* (fungus) **Taxa:** Fungi
Date: July 16, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No draft or official survey protocol, or professionally accepted method for surveying, is available for this species. The appearance of the structures necessary to identify this species are highly variable from year to year. It may be several years between conditions that result in fruiting bodies being produced for this species. While surveys might locate some populations if localized conditions are right, the effort is unlikely to locate most populations because conditions are unlikely to be correct in the window available for surveying the FY 1999 projects. This effort is unlikely to do much to protect this species and would pull the limited number of experts from other efforts that will provide much needed information on this and other fungi species included in the Survey and Manage Standard and Guideline. Technically we do not have the ability to survey for this species on FY 1999 projects because conditions necessary to find the species are unlikely to occur in the next year. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because it appears to be well distributed, reducing the potential for the FY 1999 projects to substantially affect the species. We have obtained several new sites in central and southern Oregon Coast Ranges, and several are in early seral forests.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the 16 units that responded for this species, 10 agreed with the taxa team's analysis and six disagreed with parts of the taxa team's analysis that were not critical to the result determination and agreed with the parts that were critical. The BLM Eugene District responded that the species occurs in all of its resource areas and is ubiquitous in a variety of standard conditions. The BLM Roseburg District, BLM Klamath Falls Resource Area, and the Winema National Forest have personnel that can inventory and identify this species.

Reconciliation: None needed. The field unit response did not substantially differ from the taxa team's analysis. The primary critical factor that exists for all units is that determination of whether the species is present will require several years of survey, even if a few units are able to find and identify it.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: Information included in The Report of the Scientific Analysis Team (SAT Report, March 1993) stated that the species is uncommon to rare in the Oregon and Washington Coast Range into British Columbia, and occurs in deep conifer litter layers in older forests (SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 292). This species received a collective rating by the FEMAT panel for the Cup Fungi group, which determined there would be a 70 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 0 percent likelihood of being restricted to refugia; and a 0 percent probability of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-81, July 1993). Appendix J-2 (p. 196, February 1994) describes the species as a West Coast endemic that occurs in late-successional and old-growth forests and is known from scattered locations, mostly in the Coast Range of Oregon and California. Additional information available since the FEMAT review suggested that the panel rating was optimistic for this species, and should be changed to 60-20-15-5 to reflect concerns about loss of habitat and lower viability.

Pertinent Information Since ROD: The Cup Fungi groups in the Management Recommendations for Survey and Manage Fungi (Version 2.0, September 1997) does not include information on this species.

Species: IV.8 *Diplophyllum plicatum* (liverwort) **Taxa:** Bryophyte
Date: September 30, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: An officially transmitted protocol is available for this species, as well as a taxonomic description that can be used for field identification. It is difficult to locate in the field and requires microscopic work to identify this species. There are not enough trained personnel to reliably identify this species in the field for FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because the range is believed to overlap with that of the marbled murrelet, and mitigation measures for the marbled murrelet will provide some habitat protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the 12 units that responded for this species, five agreed with the taxa team's analysis; two disagreed; and one was unsure. Three units disagreed with elements that were not critical to the result determination and agreed with the parts that were critical. The two units that disagreed with the taxa team's analysis responded that there are district botanists qualified to conduct surveys (Mount Hood National Forest) or are staffed to work with the Regional Bryologist to complete surveys (BLM Eugene District).

Reconciliation: Not needed. The field unit responses substantially agreed with the taxa team's analysis concerning the critical factors that make surveys for this species infeasible for FY 1999.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: This liverwort received a rating by the FEMAT panel which determined there would be a 10 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 30 percent likelihood of being restricted to refugia; and a 30 percent probability of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-103, July 1993). Appendix J2 (February 1994, p. 85) describes the species as rare and local within the range of the northern spotted owl including coastal Oregon, the Olympic Peninsula and Washington Cascades. Generally the distribution is spotty and poorly known, and half of the known locations in Oregon are on non-federal land. It requires cool, moist conditions and grows on bark, decaying wood, and thin soil over rock.

Pertinent Information Since ROD: The draft Management Recommendations (Version 1.1, November 1996) describes this species as restricted to sites with high humidity and cool temperatures throughout the year that occurs on primarily in Sitka spruce forests at low elevations, generally in canyons and in cliffs; northward. it extends to alpine areas and commonly grows on tree bases. It is a common species in coastal British Columbia and Alaska. The Management Recommendations report 23 known sites in Oregon and Washington, with about half occurring on Federal lands. The draft survey protocol (Version 2.0, December 1997) provides a more refined description of substrates where the species has been found including decayed wood, down logs, trunks of Douglas-fir, Pacific yew, and Sitka spruce as well as mineral soil and rock. Habitat is described as moist north-facing cliffs, especially in shaded cliff crevices along river and stream banks, and on soil of upturned roots. The draft protocol reports 18 known sites in Washington and three in Oregon. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 11 sites with a description allowing location to within 1.5 miles of the actual location and two additional sites described at a more general level.

Species: IV.9 *Kurzia makinoana* (liverwort) **Taxa:** Bryophyte
Date: July 16, 1998
Compilers: Robin Bown, Cheryl McCaffrey, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: A survey protocol exists for this liverwort and has been transmitted to the field. However, this species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field; and there are not sufficient personnel who can readily identify this species in the field to survey for FY 1999 projects. In order to identify this species, it must be taken back to the lab and examined under a microscope. Technically, therefore, we do not have the ability to identify these species on sites. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because the range overlaps with the marbled murrelet, and mitigation measures for the marbled murrelet will provide some habitat protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the 15 field units responding relative to this species, nine agreed with the above rationale; one disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical; and two disagreed with the parts of the analysis that are critical to the result determination. Three field units were unsure about the rationale. The BLM Eugene District felt that they were staffed to do these surveys and had worked with the Regional Bryologist to survey habitat areas but did not indicate that they had a taxonomic description for identification in the field, one of the critical elements leading us to consider surveys for this species not technically feasible at this time. The BLM Salem District felt that they could survey for and identify this species, but gave no specifics.

Reconciliation: Two of the 11 field units felt they could survey for and identify this species. However, accurate field location and identification is difficult, because it is difficult to tell apart from other species (requires microscopic observation). In addition, taxonomic status is uncertain. Based on the lack of a taxonomic description allowing field identification of this species, the limited number of people able to identify it, and the difficulty in accurately and readily identifying the species in the field, it is not feasible to survey for this species for FY 1999 projects. There would be no substantial risk from FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: This liverwort received a rating by the FEMAT panel which determined there would be a 91 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across Federal lands; a 3 percent probability of stabilizing but with gaps in the historic distribution; a 3 percent likelihood of being restricted to refugia; and a 3 percent probability of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-103, July 1993). Appendix J2 (February 1994, p. 87) describes the range as throughout the region but uncommon. It occurs on well-shaded rotten wood and humic soil at low elevations, especially on stream terraces and other cool, moist forest locations. The species is associated with old growth in Oregon and Washington, and wetlands in California. No estimate of known sites is reported in J2.

Pertinent Information Since ROD: The draft Management Recommendations (Version 1.1, November 1996) reports that the species is known from only three locations within 25 miles of the coast in Washington in old-growth forest near riparian areas. Collections from British Columbia are from shaded humus banks in forests. Sites in California are more specifically described as mire or small bogs. The draft survey protocol (Version 2.0, December 1997) described occurrence of this species on rocky cliffs and ledges, soil banks and cuts, on decayed wood, rarely on the base of trees, and in shaded moist sites or bogs. The known sites identified are two in Washington (Olympic National Park and Mt. Baker-Snoqualmie National Forest) and two in California (Fort Bragg and Redwood National Park). Suspected range could include any areas along the west slope of the Cascades where cool, humid conditions occur. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains three sites with a description allowing location to within 1.5 miles of the actual location and one additional site described at a more general level.

Species: IV.10 *Marsupella emarginata var. aquatica* (liverwort) **Taxa:** Bryophyte
Date: July 16, 1998
Compilers: Cheryl McCaffrey, Robin Bown, Sarah madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: A survey protocol exists for this aquatic liverwort and has been transmitted to the field. However, this species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field; and there are not sufficient personnel who can readily identify this species in the field to survey for FY 1999 projects. There is professional confusion as to whether this is actually a variety distinct from the species. (The full species is not on the Survey and Manage list.) Thus identification by field staff would be uncertain. Therefore, we do not have the ability to identify these species. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because the riparian buffers in the Aquatic Conservation Strategy provides good protection for the species.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the 13 field units responding relative to this species, five agreed with the above rationale; four disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical; two disagreed with parts of the analysis that are critical to the result determination; and two were unsure about the rationale. The BLM Eugene District disagreed with part of the rationale but agreed that there were problems with the taxonomic description for field identification. The Mount Hood National Forest felt that technical descriptions were sufficient for identification and that their botanists met the requirements for surveyors.

Reconciliation: Only one of the 13 affected units felt capable of surveying for and identifying this species. Taxonomic status is uncertain. Based on the lack of a clear taxonomic description allowing field identification of this species, the limited number of people able to identify it, and the difficulty in accurately and readily identifying it in the field, it is not feasible to survey for this species for FY 1999 projects; and there would be no substantial risk from FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: This liverwort received a rating by the FEMAT panel which determined there would be a 0 percent probability that the Northwest Forest Plan would provide habitat of sufficient quality, distribution, and abundance to allow the species population to stabilize, well-distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 60 percent likelihood of being restricted to refugia; and a 10 percent probability of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-103, July 1993). Appendix J2 (February 1994, p. 89) reports that this species is known from only one location in western North America on a stream draining Waldo Lake in the western Oregon Cascades. Habitat is described as streamside rocks in the splash zone at middle to higher elevations.

Pertinent Information Since ROD: The draft Management Recommendations (Version 1.1, November 1996) also reports that this species is known from only one location in the western United States (Waldo Lake, Willamette National Forest) and that it may occur in other cold, perennial streams in the Oregon and Washington Cascades. The known site is in the bed of a fast-flowing, cold, perennial stream at 5410 feet which is shaded by a large mountain hemlock and receives partial sun. No additional range or habitat information is provided by the draft survey protocol (Version 2.0, December 1997). Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains three sites with a description allowing location to within 1.5 miles of the actual location.

Species: IV.11 *Brotherella roellii* (moss) **Taxa:** Bryophyte
Date: July 16, 1998
Compilers: Cheryl McCaffrey, Robin Bown, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: A survey protocol does not exist for this moss, though other helpful documents have been officially transmitted to the field. Descriptions of the species, its habitat, and range do exist in Management Recommendations and a field guide; methods for survey exist in protocols for other moss species which have been transmitted to the field. While there is a taxonomic description available for identification, there are not sufficient personnel who can readily identify this species in the field to survey for FY 1999 projects. Identification requires preparation and analysis of microscope slides, and consistent identification is difficult even by the experts. Technically, therefore, we do not have the ability to identify these species. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because the riparian buffers in the Aquatic Conservation Strategy provides good protection for the species. Recent inventories north of our range (British Columbia) have found it with more frequency, suggesting that it may be more common as we learn better how to identify it.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the four field units responding relative to this species, one agreed with the above rationale; one disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical; one disagreed with the parts of the analysis that are critical to the result determination; and one was unsure about the rationale. The BLM Salem District felt that they were staffed to do these surveys and could identify the species.

Reconciliation: Only one of the four affected field units felt they could survey for and identify this species. The difficulty of consistent identification, even by experts, and the requirement for preparation and analysis of microscope slides make field surveys for this species relative to FY 1999 projects technically infeasible.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: Information included in The Report of the Scientific Analysis Team (SAT Report, March 1993) stated that the species is very rare and endemic to the Washington Cascades north of Snoqualmie Pass, and occurs on rotting logs in low- to mid-elevation old-growth stands with dense shade, closed canopies, and high humidity (SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 291). This species was not rated by the FEMAT panel (July 1993), and was not described in Appendix J2 (February 1994).

Pertinent Information Since ROD: The draft Management Recommendations for this species (Version 1.1, October 1996) describes it as endemic to the Pacific Northwest, occurring only in southwestern British Columbia and Washington. Habitat is reported as cool, moist, open mixed coniferous and deciduous forests, on slopes, stream terraces and swampy floodplains mostly at low elevations along valley margins. Vine maple and red alder are the preferred hardwood habitat. Substrates include rotten logs, stumps, and bases of trees. The species is not restricted to old growth, and most populations have been reported from secondary forest. It is known from 8 collections in Washington, with 6 collected prior to 1915. The type location is near Enumclaw, King County, Washington. The reason the species was not rated by the FEMAT panel is because it was poorly known; the limited information available suggests that the species inhabits lowland forests which occur mostly on private land and in urban areas that have been developed since the time of the original collections. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains one site with a description allowing location to within 1.5 miles of the actual location and four additional sites described at a more general level.

Species: IV.12 *Buxbaumia viridis* (moss) **Taxa:** Bryophyte
Date: July 16, 1998
Compilers: Cheryl McCaffrey, Robin Bown, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: A survey protocol does not exist for this moss, though other helpful documents have been officially transmitted to the field. Descriptions of the species, its habitat, and range do exist in Management Recommendations and a field guide; methods for survey exist in protocols for other moss species which have been transmitted to the field. Identification requires mature reproductive structures which are only present for a very limited, and not fully predictable, time. Therefore, it is likely to take more than one season to catch the species in the appropriate condition for identification. While surveys might locate some populations if the surveyors are fortunate enough to catch the species displaying the correct structures, the chance of catching the needed structures is low and the effort is unlikely to locate most populations. This effort is unlikely to do much to protect this species and would pull the limited number of experts from other efforts that will provide much needed information on this and other species included in the Survey and Manage Standard and Guideline. Technically, we do not have the ability to identify these species for FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because the requirement for leaving down woody debris in Late-Sucessional Reserves would provide good protection for the species. In addition, since the initial known site database (1995), the number of sites known to the Regional Bryologist has increased from 13 to 23.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the 17 field units responding relative to this species, nine agreed with the above rationale; three disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical; three disagreed with the parts of the analysis that are critical to the result determination; and two were unsure about the rationale. The BLM Roseburg District, Umpqua National Forest, and Winema National Forest felt that they were capable of identifying this species in the field.

Reconciliation: Only three of the 17 field units felt they could survey for and identify this species. However, identification of this species is dependent on surveys being conducted during a very limited and unpredictable window when the necessary mature features are present to distinguish this species from a closely related species; therefore, it is not feasible to survey FY 1999 projects for this species.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: Information included in The Report of the Scientific Analysis Team (SAT Report, March 1993) stated that the species is fairly rare, occurs in old-growth forests on rotten logs and some organic soil, and is shade-dependent (SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 291). This species was not rated by the FEMAT panel (July 1993), and was not described in Appendix J2 (February 1994).

Pertinent Information Since ROD: The draft Management Recommendations for this species (Version 1.1, November 1996) describes the range as from northern California to British Columbia in our area, and it is also known from Montana. The species occurs on rotten stumps and logs on mineral or organic soil in cool, shaded, humid locations at middle elevations (known sites range from 3500 to 5000 feet). Floodplains and stream terraces are favorable habitats because of the large amount of decayed wood available in old growth, but the species can be found on almost any landform as long a microclimatic conditions are favorable. Because *B.viridis* occurs at elevations higher than *B.piperi* and a large percentage of known sites occur in congressionally withdrawn areas, this threat to this species from timber harvest is less significant. However, since nearly all known sites are long trails, impacts from recreation may threaten the species. Of the 10 known sites, nine are on Federal land (seven within congressionally designated reserves) and one is on state land. The Management Recommendations indicate that the species was included in the group of "less common decaying species" and rated by the FEMAT panel as having a high probability that this group would remain well distributed throughout their range, however this group was not found in Table IV-17 in the FEMAT report. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 11 sites with a description allowing location to within 1.5 miles of the actual location and two additional sites described at a more general level.

Species: IV.13 *Rhizomnium nudum* (moss) **Taxa:** Bryophyte
Date: July 16, 1998
Compilers: Cheryl McCaffrey, Robin Bown, Sarah Madsen

April 20 Taxa Team Information Used for Technical Feasibility and Risk: A survey protocol does not exist for this moss, though other helpful documents have been officially transmitted to the field. Descriptions of the species, its habitat, and range do exist in Management Recommendations and a field guide; methods for survey exist in protocols for other moss species which have been transmitted to the field. While there is a taxonomic description available for identification in the field, there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Identification requires preparation and analysis of microscope slides; field identification is very difficult. Technically, therefore, we do not have the ability to identify these species. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed. In Washington, there are nearly 30 sites; in Oregon and northern California, its distribution is mostly coastal where marbled murrelet mitigation and the extent of Late-Successional Reserves should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the 12 field units responding relative to this species, six agreed with the above rationale; three disagreed with the parts of the analysis that are critical to the result determination; and three were unsure about the rationale. The BLM Salem, Eugene, and Roseburg Districts felt that they were staffed to do these surveys and could survey for and identify this species.

Reconciliation: Only three of the 12 potentially affected field units felt they could survey and identify this species. This species is difficult to identify in the field and requires preparation and analysis of microscope slides, thus making field surveys for this species relative to FY 1999 projects technically infeasible.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: Information included in The Report of the Scientific Analysis Team (SAT Report, March 1993) grouped this species with *Buxbaumia viridis, Schistostega pennata, and Tetraphis geniculara,* and stated that the species is fairly rare, occurs in old-growth forests on rotten logs and some organic soil, and is shade-dependent (SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 291). This species was not rated by the FEMAT panel (July 1993), and was not described in Appendix J2 (February 1994).

Pertinent Information Since ROD: This species was not included in the draft Management Recommendations for Bryophytes (1996). Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 45 sites with a description allowing location to within 1.5 miles of the actual location and 21 additional sites described at a more general level.

Species: IV.15 *Tetraphis geniculata* (moss) **Taxa:** Bryophyte
Date: July 16, 1998
Compilers: Sarah Madsen, Robin Bown, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official or draft protocol has been transmitted to the field, nor is there a professionally accepted method to survey for this species. Determining whether the species is present at a site may take several years. Sporophytes must be present to differentiate this species from the more common T. pellucida, and these sporophytes appear only when conditions are optimum. While surveys might locate some populations if the surveyors are fortunate enough to catch the chance the correct structures, the chance of catching the needed structures is low and the effort is unlikely to locate most populations. This effort is unlikely to do much to protect this species and would pull the limited number of experts from other efforts that will provide much needed information on other species included in the Survey and Manage Standard and Guideline. Therefore, surveying for this species on FY 1999 projects is infeasible. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because it will receive protection in Late-Successional Reserves.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the 11 units that responded for this species, five agreed with the taxa team's analysis; five disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical; and one unit was unsure.

Reconciliation: None needed. None of the field units disagreed with the elements critical to the determination of feasibility and risk.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: Information included in The Report of the Scientific Analysis Team (SAT Report, March 1993) grouped this species with *Buxbaumia viridis, Schistostega pennata, and Rhizomnium nudum,* and stated that the species is fairly rare, occurs in old-growth forests on rotten logs and some organic soil, and is shade-dependent (SAT Report, Mitigation Step 5 - Standards and Guidelines for Rare and Locally Endemic Species, p. 291). This species was not rated by the FEMAT panel (July 1993), and was not described in Appendix J2 (February 1994).

Pertinent Information Since ROD: The draft Management Recommendations for this species (Version 1.1, November 1996) state that the it is known from scattered locations from northern California to Alaska and inhabits rotten coniferous stumps and logs in shaded, humid locations at low to middle elevations. Of the five known sites, four are located within national parks in Washington and one is within a research natural area on the Gifford Pinchot National Forest; the other population in King County, Washington is likely on private land. Although it has been reported in the literature as occurring in Oregon, specimens and site information could not be located. Only one population has been recently documented, and all historical collections were made between the years of 1952 and 1962 and have not been verified. The species was not rated by the FEMAT panel due to limited information, and it appears to be rare in the Pacific Northwest. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains three sites with a description allowing location to within 1.5 miles of the actual location and three additional sites described at a more general level.

Species: IV.16 *Vespericola pressleyi* (Pressley heperian) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Sarah Madsen, Robin Bown, Charyl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training sessions. A taxonomic description is available for identification in the field, but there are not sufficient personnel who can reliably identify this species to survey for FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because it is strongly associated with riparian areas, which will be protected by Riparian Reserves and Aquatic Conservation Strategy objectives.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the five units that responded for this species, three agreed with the taxa team's analysis and two disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical to the determination.

Reconciliation: None needed. Field units did not disagree with the critical element that led to the determination that field surveys of FY 1999 projects were not feasible (there are not sufficient personnel who can reliably identify this species in the field).

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 20 percent probability of stabilizing, well distributed across Federal lands; a 40 percent probability of stabilizing but with gaps in the historic distribution; a 30 percent chance of being restricted to refugia; and a 10 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Vespericola pressleyi* (Pressley's hersperian snail) is localized in and around the Hayfork AMA. It is only partly associated with riparian reserves. There were four known locations: three on Federal (two in wilderness, one in an AMA) and one on private land.

Pertinent Information since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 45) identifies the range as in Trinity County, California within the boundaries of the Shasta-Trinity National Forest up to 3000 feet in elevation. Habitat is described as forest of conifer and/or hardwood trees in permanently damp areas within 200 meters of seeps, springs, and stable streams. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 18 sites with a description allowing location to within 1.5 miles of the actual location and one additional site described at a more general level.

Species: IV.17 *Vespericola shasta* (Shasta hespian) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. At this time, there are too few employees or contractors who can reliably identify the species in the field to survey for FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because it is highly riparian associated, and Riparian Reserves under the Northwest Forest Plan are expected to offer significant protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the four field units responding relative to this species, two agreed with the above rationale and two disagreed with parts of the analysis that were not critical to the result determination, but agreed with the portions that were critical. The BLM Roseburg and Medford Districts felt that it was possible to identify habitat for the species, but did not disagree with the concern over the availability of surveyors that could identify the species in the field.

Reconciliation: While units disagreed with some of the rationale used to address the feasibility of surveys, they did not disagree with all of the critical elements. In addition, neither unit is required to survey for or has had experience with this species.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 30 percent probability of stabilizing, well distributed across Federal lands; a 33 percent probability of stabilizing but with gaps in the historic distribution; a 27 percent chance of being restricted to refugia; and a 10 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Vespericola shasta* (Shasta hersperian snail) range is primarily centered around Shasta Lake at cave entrances and riparian areas. Known locations are in LSR and matrix of Trinity and Shasta Counties. There were six locations on Federal land (two in LSRs), two private land, and one in a state park.

Pertinent Information since ROD: The draft Terrestrial Mollusk Survey Protocol (Version 2.0, 10/29/97, p. 45) describes this species as endemic to the Klamath Province, primarily in the vicinity of Shasta Lake up to 3000 feet in elevation within 200 m of moist bottom lands such as riparian zones, springs, seeps, marshes, and in the mouths of caves. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 20 sites with a description allowing location to within 1.5 miles of the actual location and three additional sites described at a more general level.

Species: IV.23 *Fluminicola n. sp. 1* (Klamath pebblesnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Specimens must be brought back to the lab, relaxed, fixed and preserved--a process requiring at least two days. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the five field units responding relative to this species, four agreed with the above rationale and one disagreed with the parts of the analysis that are critical to the result determination. The Winema National Forest is planning on using a consultant to survey or identify this species. However, they have had experience surveying for this species.

Reconciliation: Given the inability to identify this species in the field and the lab time required to identify specimens, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 40 percent probability of stabilizing, well distributed across Federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 30 percent chance of being restricted to refugia; and a 10 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola n. sp*.1 (Klamath pebblesnail) is found in Siskiyou County, California, and Klamath County, Oregon. Specifically, it is found at Klamath Lake, middle and upper Klamath River, Upper Klamath Lake Wildlife Refuge, and the Winema and Rogue River National Forests. It has 'some' occurrences within or near LSRs on the west side of Klamath Lake. One site is on matrix lands. Its habitat is spring-fed lakes and rarely in large springs.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.29) reports that this species occurs in Upper Klamath Lake and major spring-fed tributaries, and includes sites in the Winema and Rogue River National Forests and Upper Klamath Lake National Wildlife Refuge. It also occurs sporadically in the middle and upper sections of the Klamath River in Siskiyou County, California. The species is generally found in areas with gravel-boulder substrates and flowing water and prefers cold, oligotrophic water with high dissolved oxygen. It is known from eight sites. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 13 sites with a description allowing location to within 1.5 miles of the actual location and two additional sites described at a more general level.

Species: IV.24 *Fluminicola n. sp. 2* (tall pebblesnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Specimens must be brought back to the lab, relaxed, fixed and preserved--a process requiring at least two days. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the three field units responding relative to this species, one agreed with the above rationale and two disagreed with the parts of the analysis that are critical to the result determination. The BLM Klamath Falls Resource Area and the Winema National Forest are planning on using consultants to survey or identify this species. Neither had had experience surveying for this species.

Reconciliation: Given the inability to identify this species in the field and the lab time required to identify specimens, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 30 percent probability of stabilizing, well distributed across Federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 25 percent chance of being restricted to refugia; and a 25 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola n.sp. 2* (tall pebblesnail) is found in Upper Klamath Lake. It has one known site on private land. It is an obligate to springs in shaded areas.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.29) reports that this species is a local endemic to the Klamath Basin and occurs in one large, very cold, undisturbed spring that drains into Upper Klamath Lake. This site is located on private land adjacent to the Winema National Forest. It is an obligate spring dweller that may be photophobic, and occurs on pebbles and cobbles. Large cyanobacteria colonies (locally known as mare's eggs) cover much of the bottom of the spring at the known site. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains one site with a description allowing location to within 1.5 miles of the actual location.

Species: IV.25 *Fluminicola n. sp. 3* (Klamath rim pebblesnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Specimens must be brought back to the lab, relaxed, fixed and preserved--a process requiring at least two days. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Of the three field units responding relative to this species, two agreed with the above rationale and one disagreed with the parts of the analysis that are critical to the result determination. The Winema National Forest is planning on using a consultant to survey or identify this species. However, they have had experience surveying for this species.

Reconciliation: Given the inability to identify this species in the field and the lab time required to identify specimens, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 35 percent probability of stabilizing, well distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 15 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola n. sp. 3* (Klamath rim pebblesnail), is found in the middle reaches of the Klamath River at cold, shaded springs high above the flood plain. Sites are located in LSRs on both Federal and private lands.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.29) reports that this species is known from three sites in Klamath County, Oregon; two of these sites are located on BLM Medford District lands. Habitat appears to be small, cold flows emanating from spirng in shaded areas, and it is possibly photophobic. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains four sites with a description allowing location to within 1.5 miles of the actual location.

Species: IV.26 *Fluminicola n. sp. 11* (Fredenburg pebblesnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Specimens must be brought back to the lab, relaxed, fixed and preserved--a process requiring at least two days. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Only the BLM Medford District responded relative to this species, and they agreed with the above rationale.

Reconciliation: Given the inability to identify this species in the field and the lab time required to identify specimens, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 35 percent probability of stabilizing, well distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 15 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola n. sp. 11* (Fredenburg pebblesnail) is found in spring runs of the middle Klamath River at Jackson County, Oregon. Its habitat is very large, cold, shaded springs and their outflows. Its habitat is associated cobbles and gravel with monkey flower and watercress. The only site known for this narrow endemic is on BLM land.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.30) reports that this species is known from a single site, Fredenburg Springs, on the BLM Medford District. Habitat is recognized as small, cold flows emanating from springs with cobble and gravel substrates. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains two sites with a description allowing location to within 1.5 miles of the actual location.

Species: IV.27 *Fluminicola n. sp. 14* (potem pebblesnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Specimens must be brought back to the lab, relaxed, fixed and preserved--a process requiring at least two days. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Only BLM northern California responded relative to this species, and they agreed with the above rationale.

Reconciliation: Given the inability to identify this species in the field and the lab time required to identify specimens, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 40 percent probability of stabilizing, well distributed across Federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola n. sp. 14* (Potem pebblesnail), is found in Shasta County only and is known in six sites in tributaries of the upper Pit and Sacramento River tributaries. Its habitat is muddy-silty substrates in heavily shaded cold springs and spring runs. It grazes on the surface of decaying deciduous leaves. There were six known locations, one on Shasta National Forest and five on private land.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.30) describes the range as in the upper Sacramento River and Pit River basins. It prefers spring habitats, and substrate types at occupied sites are usually mud, silt and sand with scattered gravel, cobbles, and boulders. The species has been found at elevations ranging from 1440 feet to 3160 feet, and has been collected from 11 sites (one in the Shasta-Trinity National Forest). It may be a detritivore that feeds on fine organic detrital particles and/or decaying deciduous leaves. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 13 sites with a description allowing location to within 1.5 miles of the actual location.

Species: IV.28 *Fluminicola n. sp. 15* (flat-top pebblesnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Specimens must be brought back to the lab, relaxed, fixed and preserved--a process requiring at least two days. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Only the Shasta National Forest responded relative to this species, and they agreed with the above rationale.

Reconciliation: Given the inability to identify this species in the field and the lab time required to identify specimens, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 40 percent probability of stabilizing, well distributed across Federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola n.sp. 15* (flat-top pebblesnail) is found in tributaries of upper Sacramento River and historically it occurred in the Pit River. Its habitat is sandy/gravelly substrates of shady cold springs and seeps. It was known from four sites, all on private land near Federal lands.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.30) describes this species as endemic to the upper Sacramento River system in small, perennial, cold springs or spring sources on gravel substrates ranging from 2480 feet to 2760 feet in elevation. It has been found at only four spring sites, and none are located on Federal land. It appears to be a perilithon grazer. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains four sites with a description allowing location to within 1.5 miles of the actual location.

Species: IV.29 *Fluminicola n. sp. 16* (Shasta pebblesnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Specimens must be brought back to the lab, relaxed, fixed and preserved--a process requiring at least two days. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Only the Shasta National Forest responded relative to this species, and they agreed with the above rationale.

Reconciliation: Given the inability to identify this species in the field and the lab time required to identify specimens, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 25 percent probability of stabilizing, well distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 25 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola n. sp. 16* (Shasta pebblesnail) is known from 16 sites along the Shasta Springs area of Sacramento River. Its habitat is in lower portions of large cold springs in water cress (Rorippa) beds and on pebbles/cobbles. Half of the known locations were on the Shasta National Forest and half were on private lands.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.31) describes this species as endemic to the upper Sacramento River in the lower portions of larger springs among water cress (*Rorippa*) on pebbles and cobbles at elevations from 2440 feet to 3000 feet. This species has been collected from 16 sites, and none are located on Federal land. It appears to graze on periphyton and perilithon. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 17 sites with a description allowing location to within 1.5 miles of the actual.

Species: IV.30 *Fluminicola n. sp. 17* (disjunct pebblesnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Specimens must be brought back to the lab, relaxed, fixed and preserved--a process requiring at least two days. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Only the Shasta National Forest responded relative to this species, and they agreed with the above rationale.

Reconciliation: Given the inability to identify this species in the field and the lab time required to identify specimens, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 25 percent probability of stabilizing, well distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 25 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola n. sp. 17* (disjunct pebblesnail) was found at three private sites at the Shasta Springs complex in the upper Sacramento River. Its habitat is in lower portions of large cold springs in water cress (Rorippa) beds and on pebbles/cobbles.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.31) describes this species as endemic to the upper Sacramento River in the lower portions of larger springs commonly on submerged *Rorippa* stems at sites from 2480 feet to 2520 feet in elevation. The species has been collected from three sites, and none are located on Federal land. It appears to graze on periphton and perilithon for food. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains two sites with a description allowing location to within 1.5 miles of the actual location.

Species: IV.31 *Fluminicola n. sp. 18* (globular pebblesnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Specimens must be brought back to the lab, relaxed, fixed and preserved--a process requiring at least two days. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Only the Shasta National Forest responded relative to this species, and they agreed with the above rationale.

Reconciliation: Given the inability to identify this species in the field and the lab time required to identify specimens, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 40 percent probability of stabilizing, well distributed across Federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola n. sp. 18* (globular pebblesnail) is found in small, shaded cold springs on stones and wood in shaded areas. There were four known locations, two on Federal land and two on private land in the upper Pit and Sacramento River.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.31) identifies the range of this species as along the Sacramento and Pit Rivers in small spring and spring headwaters on the sides and undersides of stones in shaded areas from 2460 feet to 2800 feet in elevation. It has been collected from three sites, none of which are located on Federal land. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains four sites with a description allowing location to within 1.5 miles of the actual location.

Species: IV.32 *Fluminicola n. sp. 19* (umbilicate pebblesnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Specimens must be brought back to the lab, relaxed, fixed and preserved--a process requiring at least two days. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: No field units responded relative to this species.

Reconciliation: Given the inability to identify this species in the field and the lab time required to identify specimens, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 35 percent probability of stabilizing, well distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 15 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola n. sp. 19* (globular pebblesnail) is found in one cold spring near Hat Creek in the Pit River drainage, Lassen National Forest (outside the Forest Plan area). Its habitat is associated sand and gravel with brooklime and watercress.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.31) identifies one known occurrence of this species at Big Spring, a tributary to Hat Creek, at 4600 feet elevation in Lassen National Forest, Shasta County, California. Habitat is submerged portions of emergent *Rorippa* and *Veronica* on mixed silt, sand, gravel, and cobble substrates of spring pools and their outflows. It may feed on a variety of food types including perilithon, periphyton, and epipelic algae and detrital particles. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains one site with a description allowing location to within 1.5 miles of the actual location.

Species: IV.33 *Fluminicola n. sp. 20* (Lost Creek pebblesnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Specimens must be brought back to the lab, relaxed, fixed and preserved--a process requiring at least two days. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: No field units responded relative to this species.

Reconciliation: Given the inability to identify this species in the field and the lab time required to identify specimens, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 30 percent probability of stabilizing, well distributed across Federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 30 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Fuminicola n. sp*.20 (Lost Creek pebblesnail) is found in a cold swift spring-fed creek near Hat Creek in the Pit River drainage, Lassen National Forest (outside the Forest Plan range). Its habitat is associated sand-cobble near the shore with water hemlock and watercress. Only two sites were known at that time.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.32) described this species as a localized endemic that occurs only in the Pit River system in streams within swift-flowing water near shore on sand-cobble substrate with *Rorippa* and *Cicuta*. It has been collected from two sites, including one on the Lassen National Forest. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains two sites with a description allowing location to within 1.5 miles of the actual location.

Species: IV.34 *Juga (Orebasis) n. sp. 2* (basalt juga) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Therefore, technically we do not have the ability to survey FY 1999 projects for this species. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide a level of protection.

Result of Initial Core Team Analysis: Not technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Two field units responded concerning this species, and both agreed with results described above.

Reconciliation: None needed. Given the inability to identify this species in the field, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 40 percent probability of stabilizing, well distributed across Federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Juga (Oreobasis) n. sp. 2* (basalt juga) is found in springs in small, low elevation drainages. The eight known sites are mostly on private land along the Columbia River, in Hood River and Wasco Counties, Oregon. Some are on the Mount Hood National Forest.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.28) described the range of this species as the central and eastern portions of the Oregon side of the Columbia River Gorge. It occurs in small, shallow, undisturbed perennial springs that flow into the Columbia River on gravel substrates where *Rorippa* is present. Occupied sites are often surrounded by basalt talus. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 28 sites with a description allowing location to within 1.5 miles of the actual location and one additional site described at a more general level.

Species: IV.35 *Juga (Orebasis) n. sp.* 3 (cinnamon juga) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Only the Shasta National Forest responded relative to this species, and they agreed with the above rationale.

Reconciliation: Given the inability to identify this species in the field, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 25 percent probability of stabilizing, well distributed across Federal lands; a 30 percent probability of stabilizing but with gaps in the historic distribution; a 25 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Juga (Orebasis) n. sp. 3* (cinnamon juga) is suspected to occur in cold, large, shaded springs and spring runs on sand and cobble. The four known sites were on private land along the Sacramento River, Shasta County.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.32) described this species as an upper Sacramento River endemic that has been collected at six sites, primarily in spring complexes. It occurs in large, cold, perennial springs at elevations from 2320 feet to 4510 feet on substrates including mud and sand (rarely) to cobbles and gravel (more commonly). Macrophytes including water cress, monkey flower, and pondweed were usually present. The species is a perilithon and possibly a fine detritus feeder. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains eight sites with a description allowing location to within 1.5 miles of the actual location.

Species: IV.36 *Lyogyrus n. sp. 1* (Columbia duskysnail*)* **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Three field units responded relative to this species, and they agreed with the above rationale.

Reconciliation: Given the inability to identify this species in the field, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 40 percent probability of stabilizing, well distributed across Federal lands; a 10 percent probability of stabilizing but with gaps in the historic distribution; a 30 percent chance of being restricted to refugia; and a 20 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Lyogyrus n. sp. 1* (Columbia duskysnail) occurs in cold springs and slow spring out-flows in soft substrates. Known locations are evenly divided between Federal and private lands in the central and eastern Columbia Gorge on the Oregon side.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.28) described this species as distributed sporadically in the central and eastern Columbia Gorge in Washington and Oregon in cold, well-oxygenated springs and spring outflows on soft substrates in shallow, low-flowing areas. It prefers areas without aquatic plants and is known from 15 sites including locations on the Columbia Gorge National Scenic Area, Gifford Pinchot National Forest, and Mt. Hood National Forest and three state parks. Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains 15 sites with a description allowing location to within 1.5 miles of the actual location.

Species: IV.37 *Lyogyrus n. sp. 3* (canary duskysnail) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Two field units responded relative to this species, and they agreed with the above rationale.

Reconciliation: Given the inability to identify this species in the field, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 30 percent probability of stabilizing, well distributed across Federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a 20 percent chance of being restricted to refugia; and a 30 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Lyogyrus n. sp. 3* (canary duskysnail) is suspected to occur in large springs underneath cobbles and boulders with red algae. There were only two known locations, both on private lands near Shasta National Forest.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.32) described this species as known from a single site in Shasta County, CA near the present boundary of the Shasta-Trinity National Forest in a very large cold spring in a spring-fed portion of the Pit River. It occurs on the undersides of loose cobble and boulders that are covered with "encrusting red algae." Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains one site with a description allowing location to within 1.5 miles of the actual location.

Species: IV.38 *Vorticifex n. sp. 1* (knobby rams-horn) **Taxa:** Mollusk
Date: July 16, 1998
Compilers: Robin Bown, Sarah Madsen, Cheryl McCaffrey

April 20 Taxa Team Information Used for Technical Feasibility and Risk: No official protocol for mollusks has been transmitted to the field. However, draft protocols were distributed to participants during training. This species cannot be surveyed for FY 1999 projects because there is no taxonomic description available for identification in the field and there are not sufficient personnel who can readily identify this species to survey for FY 1999 projects. Therefore, technically we do not have the ability to survey for this species on FY 1999 projects. There would not be a substantial increase in risk to the species if FY 1999 projects are not surveyed because Riparian Reserves and Aquatic Conservation Strategy objectives should provide some level of protection.

Result of Initial Core Team Analysis: Based on the above information, we did not consider it technically feasible to survey for FY 1999 projects and there is no substantial increase in risk if FY 1999 projects are implemented without surveys.

Response From Field Units to May 1998 Questionnaire: Only the Shasta National Forest responded relative to this species, and they agreed with the above rationale.

Reconciliation: Given the inability to identify this species in the field, it is not technically feasible to survey for this species for FY 1999 projects.

Core Team Recommendation: Not technically feasible to survey for FY 1999 projects and no substantial increase in risk if FY 1999 projects are implemented without surveys.

Pre-ROD Information: The FEMAT panel determined that the Northwest Forest Plan would provide habitat sufficient so that populations of this species would have a 30 percent probability of stabilizing, well distributed across Federal lands; a 20 percent probability of stabilizing but with gaps in the historic distribution; a two percent chance of being restricted to refugia; and a 30 percent chance of being extirpated from Federal lands (see FEMAT p. IV-43 and IV-128 - 131). According to Appendix J2, *Vorticifex n. sp. 1* (knobby rams-horn) is suspected to live in large, pristine springs and their cold, swift outflow. There were three known locations on private land on the Pit River of Shasta County.

Pertinent Information since ROD: The draft Aquatic Mollusk Survey Protocol (Version 2.0, 10/29/97, p.33) described this species as a Pit River endemic which has been found at two sites on private land adjacent to the Shasta-Trinity National Forest in Shasta County, California. The known sites are in large, pristine, cold, spring complex in a tributary to the Pit River at 3305 feet in elevation. Individuals may be found on the surface of cobbles and boulders that are mostly covered with an "encrusting red algae." Data in the interagency database (Known Sites Data Base v. 2.0), current as of October 1996, contains two sites with a description allowing location to within 1.5 miles of the actual location.

APPENDIX D — Questionnaire to Taxa Specialists, Field Biologists and Botanists

Date: _____ **Species Name:**_____

Taxonomic Group:_____

Participants: _____

_____

ANALYSIS OF SPECIES FOR PROPOSED CHANGE IN SURVEY SCHEDULE

The object of this analysis is to identify which of the Component 2 Survey and Manage species (C-4, Table C-3) and the Protection Buffer species (C-19 - C-20 and C-26 -C-28) may be appropriate to propose for a schedule change. Some of the questions will also seek to identify species which should receive further analysis for a possible move to a different survey strategy or to drop from the list.

For each species, please provide answers to the following questions, providing additional information or rationale if the "yes" or "no" answer is not as complete as you believe necessary. Use the additional information sheets provided.

1. A.) Is there an officially transmitted* protocol available to use to survey for this species in preparation for ground disturbing activities implemented in FY 1999? ____Yes ____No

   * An "officially transmitted" protocol is one sent by the REO under a transmittal letter signed by FS and BLM executives. Officially transmitted protocols are intended for field use under Survey Strategy 2 (Component 2) for projects, and for field testing and comment to provide basis for protocol review and possible revision. The transmittal letters instructed that deviation from the protocol is allowed if the rationale is documented.

   B.) Is there a commonly used, professionally accepted, method available to use to survey for this species for FY 99 projects? ____Yes ____No

   C.) Is there a protocol which has not been officially transmitted but is available to use to survey for this species for FY 99 projects, (for example, a draft protocol distributed at training session)? ____Yes ____No

2. A.) Is there a taxonomic description available for identification of this species in the field? ____Yes ____No

B.) Do the agencies have sufficient personnel (employees or contractors) who can reliably identify this species in the field in time to prepare for FY 99 projects? ____Yes ____No

3. A.) Is this species' habitat known well enough to target surveys so that there is a high likelihood of finding the species?

____Yes ____No

B.) Is this species' range known well enough to target surveys so that there is a high likelihood of finding the species? ____Yes ____No

C.) Is the species' life history such that finding the species' location may take several or many years, thus not be feasible to do for FY99 projects? ____Yes ____No

Does a "No" answer to 3 A, B, or C suggest that it may be appropriate to further analyze the species, perhaps to move the species' Survey Strategy from Component 2 to Component 3 or 4 in order to acquire information through extensive or general regional surveys to better specify the species' habitat and/or range? ____Yes ____No

4. Given what we know and don't know about this species and its habitat, consider the risk to this species of an additional year of management projects like those conducted in FY 1997 or 1998. Do you believe that there would be a substantially increased risk to the species if the schedule requiring surveys before ground-disturbing projects were changed from FY 1999 projects to FY 2000 projects?

If you perceive a substantial risk, please describe the nature and extent of the risk to the species and the factors that you considered. If you do not foresee a substantial risk, please indicate what factors support your judgement.

5. A. Does known information and survey results so far indicate that the species is likely to be much more common or more secure than previously thought?

____Yes ____No

B. If "Yes", do you believe it would be appropriate to explore:
____moving the species to a different survey strategy;
____changing the management recommendations;
____preparing a conservation strategy in lieu of management recommendations; and/or
____dropping the survey and manage mitigation requirement for this species?

APPENDIX E — Affected BLM and Forest Service Land Use Plans

BLM
Coos Bay District
Eugene District
Medford District
Roseburg District
Salem District
Klamath Resource Area of the Lakeview District
Those portions of the Redding Resource Area, the Arcata Resource Area, and the King Range National Conservation Area, of the Ukiah District of California, implementing the NFP.

Forest Service
Gifford Pinchot National Forest
Mount Baker-Snoqualmie National Forest
Mount Hood National Forest
Olympic National Forest
Rogue River National Forest
Siuslaw National Forest
Siskiyou National Forest
Six Rivers National Forest
Umpqua National Forest
Willamette National Forest

Those portions of the following National Forests implementing the NFP:
Deschutes National Forest
Okanogan National Forest
Wenatchee National Forest
Winema National Forest
Klamath National Forest
Lassen National Forest
Mendocino National Forest
Modoc National Forest
Shasta-Trinity National Forest

Appendix F: Effects On T & E species and critical habitat.

An updated list of species Federally listed as threatened, endangered, or proposed and designated and proposed critical habitat on Bureau of Land Management and National Forest administered lands in the NFP area is displayed in Table 1.

Table 1:

Endangered Species

Snake River Basin Sockeye
Salmon Migratory Habitat only

Oncorhynchus mykiss
Upper Columbia River Steelhead Trout

Oncorhynchus tshawytscha
Sacramento Winter Chinook Salmon

Oncorhynchus clarki clarki
Umpqua River Cutthroat Trout

Deltistes luxatus
Lost River Sucker

Chasmistes brevirostris
Shortnose sucker

Oregonichythys crameri
Oregon Chub

Pelecanus occidentalis
Brown Pelican

Falco peregrinus anatum
American Peregrine Falcon

Canis lupus
Gray Wolf

Odocoileus virginianus leucurus
Columbian White-tailed Deer

Lilium occidentale
Western Lily

Astralagus applegatei
Applegate's Milk-vetch

Arenaria paludicola
Marsh Sandwort

Threatened Species

Oncorhynchus kisutch
Southern Oregon/No. California
Coast Coho Salmon

Oncorhynchus kisutch
Central California Coho Salmon

Oncorhynchus kisutch
Oregon Coastal Coho Salmon

Oncorhynchus mykiss
Central California Coast Steelhead Trout

Oncorhynchus mykiss
California Central Valley Steelhead Trout

Oncorhynchus tshawytscha
Snake River Sp/Su Chinook Migratory Habitat only

Oncorhynchus tshawytscha
Snake River Fall Chinook Migratory Habitat only

Oncorhynchus mykiss
Snake River Steelhead Trout Migratory Habitat only

Oncorhynchus mykiss
Lower Columbia R. Steelhead

Salvelinus confluentus
Klamath R. Bulltrout DPS

Salvelinus confluentus
Columbia R. Bulltrout DPS

Branta canadensis leucopareia
Aleutian Canada Goose

Haliaeetus leucocephalus
Northern Bald Eagle

Threatened Species Continued

Charadrius alexandrinus nivosus
Western Snowy Plover

Strix occidentalis caurina
Northern Spotted Owl

Brachyramphus marmoratus
Marbled Murrelet

Ursus arctos
Grizzly Bear

Speyeria zerene hippolyta
Oregon Silverspot Butterfly

Brachinecta lynchi
Vernal Pool Fairy Shrimp

Howellia aquatilis
Water Howellia

Sidalcea nelsoniana
Nelson's Checker-mallow

Castelleja levisecta
Golden Paintbrush

Spiranthes diluvialus
Ute Ladies'-tresses

Species Proposed as Endangered

Oncorhynchus tshawytscha
Upper Columbia R. Sp Chinook

Oncorhynchus tshawytscha
Central Valley Spring Chinook Salmon

Icaricia icarioides fenderi
Fender's Blue Butterfly

Fritillaria gentneri
Gentner's Fritillary

Plagiobothrys hirtus
Hairy Popcorn Flower

Erigeron decumbens
Willamette Daisy

Sidalcea oregana var. *calva*
Wenatchee Mountains Checker-mallow

Species Proposed as Threatened

Oncorhynchus mykiss
Mid Columbia R. Steelhead

Oncorhynchus mykiss
Upper Willamette R. Steelhead

Oncorhynchus tshawytscha
Central Valley Fall Chinook Salmon

Oncorhynchus tshawytscha
Puget Sound Chinook Salmon

Oncorhynchus tshawytscha
Upper Willamette R. Chinook

Oncorhynchus tshawytscha
Lower Columbia R. Chinook

Oncorhynchus tshawytscha
Snake River Fall Chinook Migratory Habitat only

Oncorhynchus tshawytscha
So. Ore. / Coastal Cal. Chinook

Oncorhynchus keta
Hood Canal Summer Chum Salmon

Oncorhynchus keta
Columbia R. Chum Salmon.

Salvelinus confluentus
Puget Sound Bulltrout DPS

Felis lynx canadensis
North American Lynx

Lupinus sulphureus kincaidii
Kincaid's Lupine

Designated Critical Habitat

Snake River Chinook F/Sp/Su

Snake R. Basin Sockeye

Table 1. Continued

Umpqua Cutthroat Trout

Northern Spotted Owl

Marbled Murrelet

Oregon Silverspot Butterfly

Proposed Critical Habitat

Shortnose Sucker

Lost River Sucker

So. Ore. / No. California Coho Salmon

Puget Sound Chinook Salmon

Upper Willamette R. Chinook

Upper Columbia R. Sp Chinook

Lower Columbia R. Chinook

So. Ore. Coastal Cal. Chinook

Hood Canal Summer Chum Salmon

Western Snowy Plover

A biological opinion was prepared for the Final Supplemental Environmental Impact Statement and Record of Decision that implemented Alternative 9 (The NFP) as it affected listed and proposed species and designated and proposed critical habitat. As species were subsequently listed, Section 7 consultations were completed for the land use plans, as amended by the NFP, that govern management on National Forests and Bureau of Land Management Districts. Survey and Manage strategies were considered a part of the standards and guidelines of the NFP. The effects of each of the alternatives for implementing Survey and Manage strategies are described below.

Effects On Threatened, Endangered, and Proposed Species and Designated and Proposed Critical Habitat. [Proposed Action]

The Biological Opinion prepared for the ROD assumed that all the features and standards and guidelines for the NFP would be implemented. The Survey and Manage component was one such feature. A one year deferment of implementation of surveys for 32 Survey and Manage (S&M) species represents a change in the assumption. Given that there is a different assumption it is necessary to examine the magnitude of the change and its effect to listed and proposed species and designated critical habitat.

The 32 S&M species represent about 8% of the more than 400 species included in the Survey and Management strategy. Of the 32 S&M species, 24 are associated with riparian or aquatic habitats. The remaining species are all associated with late-successional/old-growth forests. The following summarizes effects of the one-year deferment of surveys on listed and proposed species and designated or proposed critical habitat. Species have been grouped where effects and rationales are the same.

Listed and Proposed Fish - No Effect for all species
All actions/projects that are proposed on BLM or FS administered lands must meet the Aquatic Conservation Strategy (ACS) objectives of the NFP. As proposed actions/projects are designed and analyzed for effects to listed fish, needs of the fish species and habitat elements required to meet ACS objectives will be independently identified through the process. The deferment of surveys for the 32 S&M species will not alter this assessment process therefore there will be no effect as a result of the deferment of surveys for the 32 S&M species for one year.

Listed and Proposed Plants - No Effect for all species
Standardized requirements to conduct surveys for listed and proposed species in the areas of the proposed actions/projects. These surveys have a high probability of locating populations of such plants irrespective of whether surveys are done for Survey and Manage species. Discovery of plant populations through their own surveys removes any effect that might result from deferring surveys for the 32species– therefore there will be no effect.

Species not associated with late-successional/old-growth forests or other habitats of the 32 Survey and Manage species. - No Effect

Brown Pelican
Aleutian Canada Goose
Western Snowy Plover
Oregon Silverspot Butterfly
Fender's Blue Butterfly
Gentner's Fritillary
Columbian White-tailed Deer
Vernal Pool Fairy Shrimp

American peregrine falcon, northern bald eagle and marbled murrelet - No Effect
Current requirements to conduct specific surveys and develop site management plans for these two species removes any potential effect from deferral of the survey requirements for the 32 species.

Gray wolf and grizzly bear - No Effect
The gray wolf is not closely associated with late-successional/old-growth forests but rather uses a wide variety of habitat types and seral stages. Requirements to survey action/project areas for den sites and rendezvous areas should remove any effect from not doing survey and management species surveys.

Grizzly bears are not closely associated with late-successional/old-growth forests and formal recovery plans require specific measures to provide adequate habitat, consequently there will be no effect.

North American Lynx - No Effect
The NFP includes provisions for the North American lynx. These provisions call for general surveys to be completed to better identify lynx distribution withing the NFP area. Lynx are thought to use late-successional/old-growth forests for denning. Other than denning habitat, the lynx is a habitat generalist. The status of "sensitive species" in the Forest Service and a "special status species" in the Bureau of Land Management carries a responsibility to conduct surveys for den sites and an analysis of project effects. Given its current status as a proposed species, den sites would be protected. Based on the surveys that provide a means to find and protect dens and the lack of association with late-successional/old-growth forests there will be no effect to lynx because of the proposed action.

Northern spotted owl - No Effect.
The biological opinion for the ROD assumed that spotted owl dispersal habitat would be provided through riparian reserves and other standards and guidelines in the matrix. The ROD acknowledged that without the 50-11-40 rule (from the spotted owl conservation strategy) that provided for dispersal habitat in matrix lands, there would need to be further assessment at local levels. This was to be done through Watershed Analysis and site specific assessments of actions and projects. Because of these assessments, dispersal habitat requirements would be met regardless of whether surveys are deferred for the 32 S&M species. Therefore there is no effect.

Incidental take (disturbance) of spotted owls occurring as a result of cutting an area that might be protected if one of the Survey and Manage species was found is not expected because seasonal restrictions (limited operating periods) provide protection from such incidental take. Incidental take associated with habitat removal was fully expected in the matrix but not accounted for or authorized in the original biological opinion. It is expected that such incidental take would not be increase because of the deferment of doing surveys for one year. Again there would be no effect beyond that already accounted for in the original biological opinion.

Designated and Proposed Critical Habitat - No Effect
The majority of critical habitat for the northern spotted owl corresponds with LSRs or other protected land allocations on Federal lands. Some occurs in the matrix. Critical habitat for marbled murrelet on Federal lands corresponds with LSRs. Critical habitat for the listed fish also corresponds well with riparian reserves in the NFP. Regardless of where critical habitat is located, rigorous standards and requirements exist to maintain the integrity of critical habitat independent of Survey and Manage requirements. The effects of any action/project to designated or proposed critical habitat must be assessed on a site specific basis. What actions/projects are deemed acceptable to maintain the integrity of critical habitat will be determined based on what is required for the critical habitat itself. Because of these requirements, there should be no effect to designated or proposed critical habitat from the deferment of surveys for the 32 S&M species.

Effects On Threatened, Endangered, and Proposed Species and Designated and Proposed Critical Habitat. **[No Action]**

The No Action alternative would result in no change in survey schedules for Survey and Manage species. Consequently, there would be no effects to listed or proposed species or designated or proposed critical habitats resulting from a decision to select this alternative.